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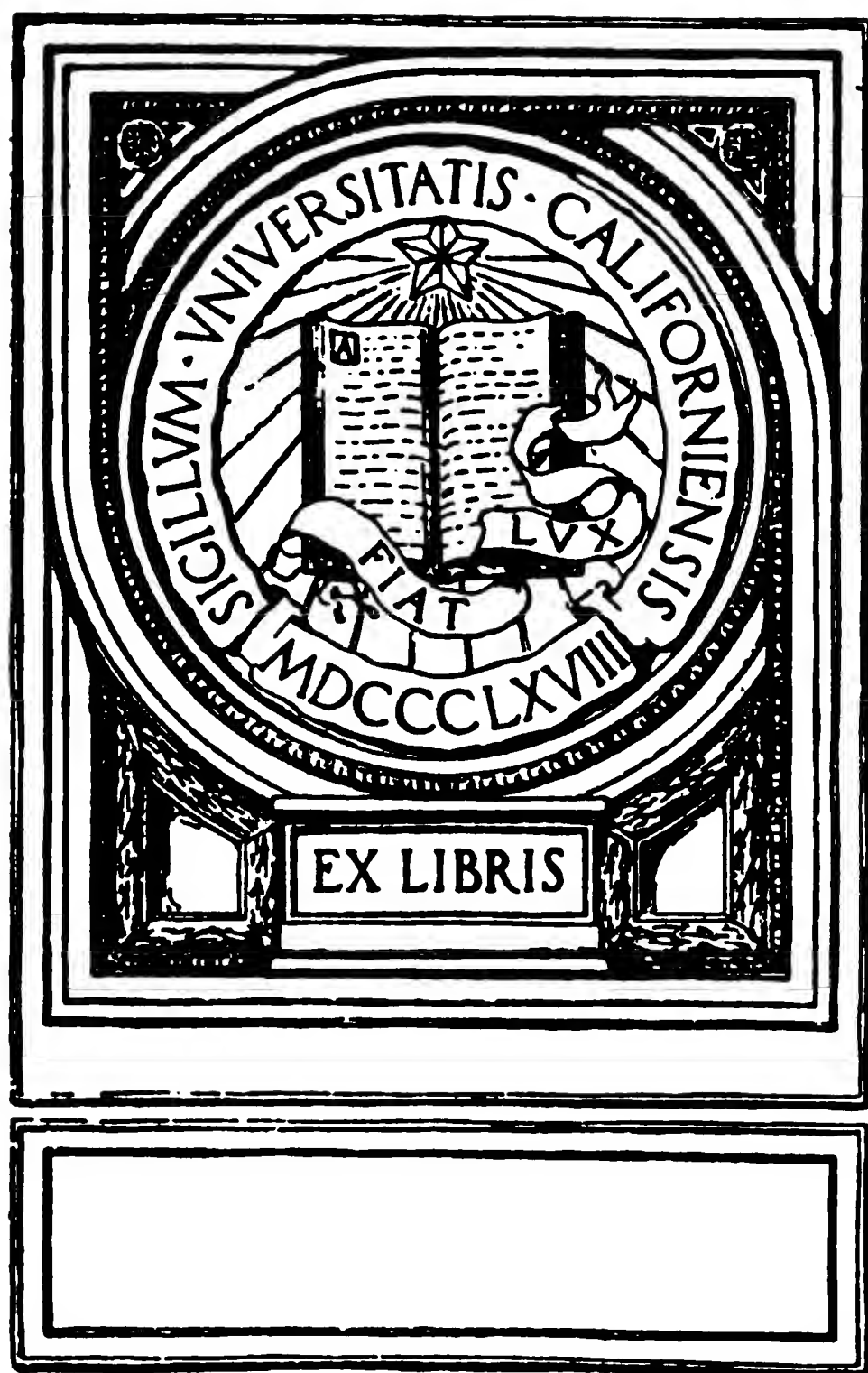
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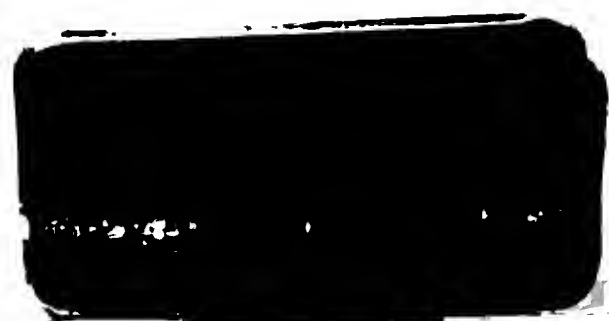
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MOTOR TRUCK

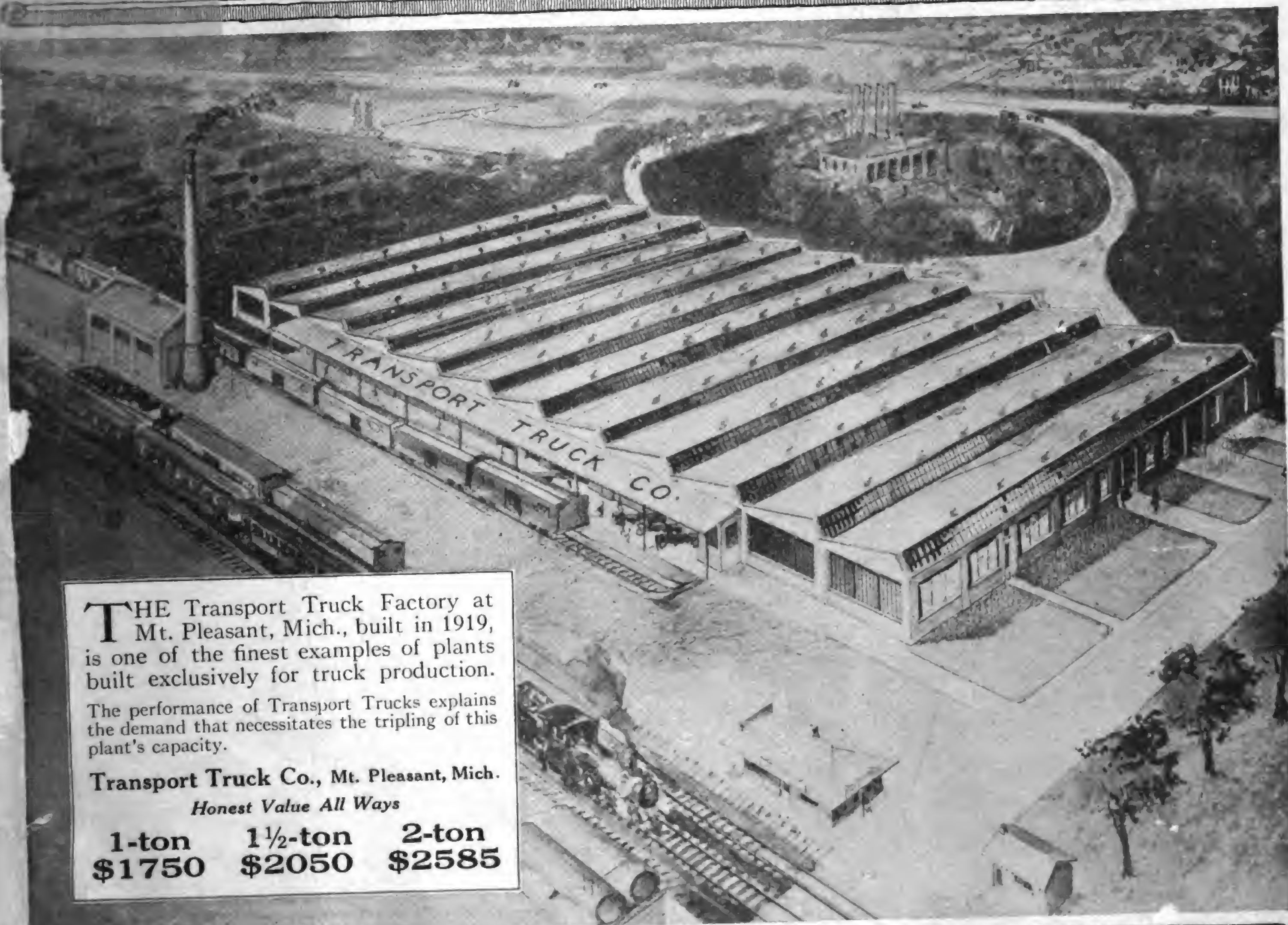
THE NATIONAL AUTHORITY OF POWER HAULAGE

Vol. XI.

PAWTUCKET, R. I., JANUARY, 1920

No. 1

TRANSPORT



THE Transport Truck Factory at Mt. Pleasant, Mich., built in 1919, is one of the finest examples of plants built exclusively for truck production.

The performance of Transport Trucks explains the demand that necessitates the tripling of this plant's capacity.

Transport Truck Co., Mt. Pleasant, Mich.
Honest Value All Ways

1-ton	1½-ton	2-ton
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Internal Gear Drive TRUCKS

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Paige Motor Trucks have the basic strength to perform the unusual task as well as the usual. No work can impose a burden too heavy for Paige strength, a task too brutal for Paige endurance-qualities.

Into every Paige truck is built the stamina to keep it on the job uninterruptedly, day after day and year after year. By its faithful performance and sturdy dependability, it is continually justifying its right to be called "The Most Serviceable Truck in America."

Paige reputation grows with each successive truck that bears the Paige nameplate. The reliable character of Paige Service has won for it the spoken approval of Paige owners everywhere.

Ever since the Paige nameplate first appeared ten years ago, it has been relied upon as the symbol of an institution rather than as the mark of a product. We take pride in the fact that this faith reposed in us as an institution has never been violated.

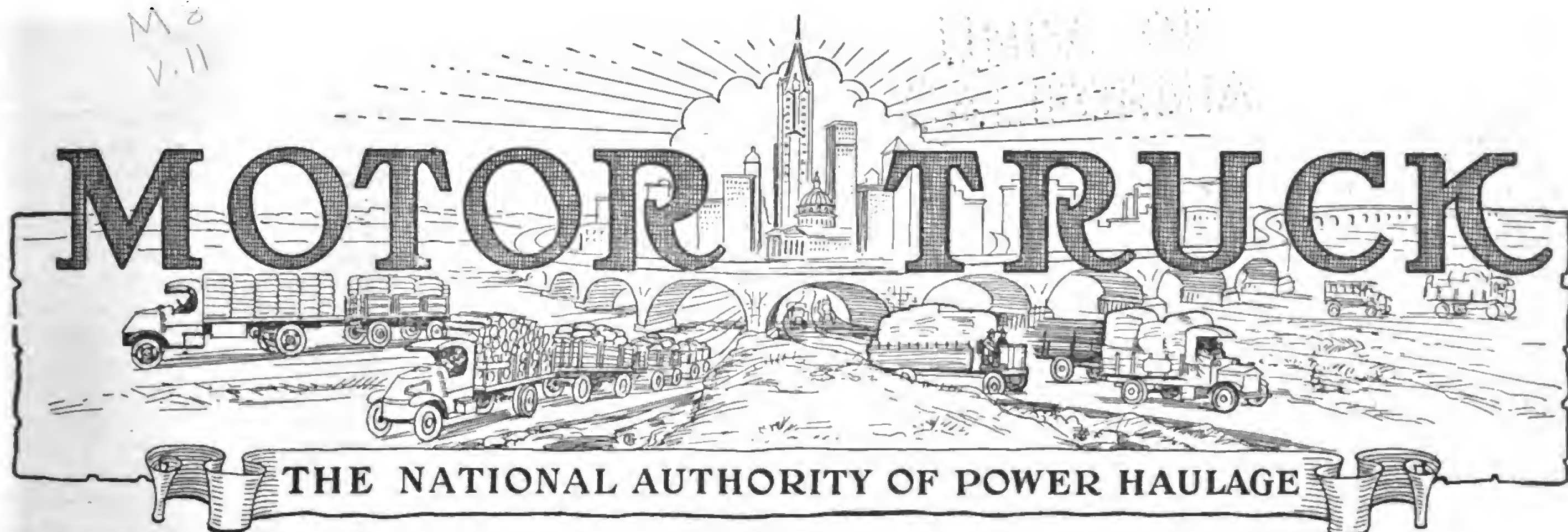
PAIGE - DETROIT MOTOR CAR COMPANY, DETROIT, Michigan

Manufacturers of Paige Motor Cars and Trucks

PAIGE

The Most Serviceable Truck in America

MOTOR TRUCKS



VOL. XI. NO. 1.

PAWTUCKET, R. I.

JANUARY, 1920.

ECONOMY OF POWER EQUIPMENT FOR CONTRACT WORK

*Excavation for Addition to Largest Cotton
Mill of World at River Point, R. I., a Basis
for Judging the Relative Values of Trucks and
Teams Operated by the Same Organization.*

POWER truck productivity depends entirely upon the use of such equipment or facilities that they can be kept moving. No matter what the work, the time of loading, unloading and driving must be minimized, and the profit is in ratio to the development of the operating plan.

This briefly summarizes the experience of Thomas J. Quinn, head of the firm of T. J. Quinn & Son, contractor, now engaged in constructing the foundation of a big mill at River Point, R. I., which is believed to be the largest work of the kind ever undertaken in the history of the textile industry of the world for a single unit.

The contract calls for cutting away a side of a hill or bank of the Flat river to a level more than 100 feet below the crest, and the removal of approximately 250,000 cubic

yards of material, of which about 50,000 cubic yards is rock work.

The cutting was begun early in October and was to be completed as quickly as possible, but because of the change of the contract, which involves much more excavation, it will probably be completed

about April 1. This work has been carried on through the winter and storms and temperature have not caused suspension.

Not only is this a work of large proportions, but it is being done with power equipment. Hand tools will only be used for cleaning or trimming, and the re-

able with the machines for economical transportation.

Ten Years' Experience with Trucks.

Mr. Quinn's statement is based on an experience with contracting for more than 20 years, about half of which he has used trucks. Quinn & Son has its office and yards at Ashton, a village in the

town of Cumberland, about 10 miles from Providence, and the company has operated in Rhode Island, southeastern Massachusetts and eastern Connecticut. Practically any kind of construction contract is taken, but a great deal of work has been done for the states, cities and towns in road and bridge building, constructing foundations, excavating and dredging canals, erecting dams and the like. A considerable part of the state highways in the sections of the three states mentioned and nearly all



Looking South in the Cutting Into the 135-Foot Hill on the East Bank of the Flat River at River Point, R. I., Where an Addition to the Largest Cotton Mill of the World Is to Be Erected.

moval of the excavated material is with both power trucks and animals. Mr. Quinn maintains that for this haulage the trucks are far superior to horses, but owning the teams and having future use for them in other contracts, he is using them, but not because they are compar-

the improved roads in the towns of Cumberland and Lincoln have been built during the last 15 years. Much work has also been done for textile manufacturers, such as building and dredging canals and mill trenches, paving mill yards and making

foundations for mills.

River Point is a village 10 miles south of Providence, through which flows the Flat river, a branch of the Pawtuxet river, and the first mills were erected there because small water power privileges were obtained by the manufacturers. Years later some of these mills became a part of the chain of factories operated by B. B. & R. Knight, a concern which is reputed to be the largest manufacturer of cotton textiles in the world. The company has a score of mills in Rhode Island, Massachusetts and Connecticut, and of these the Royal mill at River Point was said to be the largest single plant in existence.

Enlarging World's Largest Mill.

Last year, early in the summer, the Royal mill was burned with a loss of upwards of \$1,250,000. Practically all the woodwork was consumed and the costly machinery ruined, but aside from the partial demolition of the tower, which was close to 300 feet height, the massive masonry was intact and reconstruction was begun. But to meet the evolution of textile manufacturing methods and to produce more economically the plan of operating the mill was changed, and to increase the production the company decided to erect another structure on the east bank of the Flat river.

The Flat river flows north through the village. On the west bank is the Royal mill and further north on the east bank the Valley Queen mill, the two properties being separated by a main highway that crosses the river. The Valley Queen mill is west and the Royal mill east of this road. The river curves from west to east

around the Royal mill yard. Near the east end of the bridge is the entrance to a private road that follows the bank of the river south. This road is approximately the lower level of the cutting into the side of the hill in which is to be erected the addition to the Royal plant.

Foundation in a Hillside Cut.

The cut is being made between this road and a straight line through the bank that, if continued, would meet the road several hundred feet beyond the south end of the area to be leveled. The mill is to be 500 feet long and 150 wide and the cutting at the main level is to be 550 feet long and 180 feet wide. The structure will be parallel with the east line of the cutting, the west side of the mill being as close to the road as is possible.

As stated, the crest of the hill is about 115 feet above this road, and the cut is irregular in form. The road descends from the main highway and between the mill site and the entrance to the property is a low area. To reach the cut the unloaded trucks and carts must descend and then ascend a grade to the bank, and leaving the loaded vehicles are driven down a grade and then there is a short ascent to the main highway.

Cut Increased After Work Was Started.

Along the side of the road, supporting the side of the hill, is a heavy stone wall that is the west side of the mill site. Beginning at the north end the cut has been into the hill, the width increasing as the work progresses, and then decreasing near the south end or head. The original plan was to make the main level for the mill foundation 520 feet long from the north line and 160 feet wide from the

west wall, which would allow 10 feet clearance between the east wall of the mill and the base of the cut, and 20 feet clearance between the south end wall and the bank.

The mill is to be three stories and will have a basement under 150 feet of the north end. Lighting a structure of this width is a problem and as originally planned the sides of the cut were to slope at an angle of 30 degrees from vertical, but after the work was begun the plan for excavation was changed to make the site 550 feet long, with 50 feet clearance at the south end and 180 feet wide with 30 feet clearance at the east side and to change the slope to 45 degrees.

Mill Lighting Necessitated Change.

This change was due to two reasons. The first was to insure abundant light on the east side and south end of the structure, especially for the lower stories, and to have a slope to the cut that would not wash in the event of heavy storm and minimize, if not prevent, erosion of the hill side. Further than this, plan was made to erect a heavy concrete wall at the foot of the cutting to prevent earth being washed into the mill yard. The change, however, necessitated much more excavating than was first estimated, because the extra cut is deepest into the side of the hill.

Reference has been made to the main level, which is to be made ready for the construction of the first floor of the mill, but the lower level at the north end is to be approximately that on which the floor of the basement will be constructed. Logically the cut is now being made to the main level and later on the lower



The Cutting Seen from the South End, with Three Steam Shovels Making Parallel Cuts in the Bank, and the Fourth Shovel, at the Left in Reserve. With These and 12 Trucks and 20 Two-Horse Teams More Than 2500 Cubic Yards Are Removed Daily.



The Railroad Shovel at Left and a Road Shovel at Right, the Former Cutting and the Lutter Leveling, the Work Being at This Time About 25 Per Cent. Advanced.

level will be cut, for this simplifies the excavating, as all of the earth and rock taken out must be hauled over where the basement will be built, and the construction material hauled in, so the lower level cut will be the last excavated.

Practically All Work with Power.

Work was begun with two steam shovels having three-quarter yard buckets. Some of the equipment in use was at the yard at Ashton, but much of it was scattered on other jobs and mobilizing it and erecting a tool house, a blacksmith shop, derricks and other apparatus was necessary. One of the steam shovels was hauled 20 miles by truck on the highway and through four cities in less than a day.

The haulage was done by one large truck with another following with a force of men and tools to afford assistance in the event of accident, or to tow on hills, but the 7½-ton truck lumbered along with the steam shovel over all grades, being forced to low speed because the shovel is mounted on small steel tired wheels and greater speed might have resulted in damage. This is probably record time for moving a steam shovel such a distance and in similar conditions.

When the second shovel reached the hill the work was begun. The operating plan was to start work at the north end of the work at approximately the low level and cut along the side at a gradient that continued to the south end, the object being to have all descending movement of the vehicles while loaded and all ascending movement unloaded, this minimizing the power required for haulage.

Material Hauled to Two Dumps.

Two dumps were located, the one for the animal teams at a low tract near the Valley Queen mill, about an eighth of a mile distant, and the one for the trucks west of the village between a ridge and a railroad embankment. After hauling from the cut and a short distance on an ascending grade the route to the team dump was nearly level, but the haul for the trucks was descending to the main street of the village and then over a

ridge and through a barn yard, there being a number of short turns and soft surface practically the entire distance. This dump was about a quarter mile from the cut.

The intention was to do all the work with steam shovels, leaving only the clean up for hand tools, save what was necessary in loosening the material on the sides of the cut, and this necessitated each shovel having a side and head cut, the paths being practically parallel, with drives to each of these sufficiently wide for the trucks and teams to approach and leave without interruption. The headway decided on was such that each truck or cart could stop within the sweep of the jibs of the steam shovels and load, there being two lines of each type of vehicle moving to and from the dumps with such intervals that there was no waiting save when the shovels were moved forward.

Excavating with Steam Shovels.

The work was begun with the two shovels, but soon after a third shovel was brought in, this being what is known as a railroad type, being mounted on flanged

wheels and moving on a portable track, this operating a 1½-yard bucket. One of the small shovels was kept in reserve and the other two operated, the reserve shovel being always located with steam up and in readiness to begin work when movement of the others was necessary.

With these two units the haulage was done with six trucks and 13 horse teams. Of these trucks five were Macks, two of 7½ tons capacity, one of 5½ tons capacity and two of 3½ tons capacity, and an Acacon five-ton truck. All of these are equipped with end-discharging steel bodies, with power hoists, and the loads hauled ranged from three to six cubic yards, weighing about 3000 pounds to the yard. The teams hauled bottom dumping wagons with capacity of approximately 1½ yards to the load.

These were operated nine hours a day and at times on Sunday, the teams making an average of three trips to the dump an hour and the trucks making four trips an hour. Basing an estimate on these averages the teams made from 25 to 27 trips a day, traveling a quarter mile a trip, hauling a total of about 40 cubic yards, and the trucks made 36 trips of a half mile with an average load of four yards or from 140 to 150 cubic yards a day. One will note, however, that the trucks were four capacities.

Average Haulage of Trucks and Teams.

In a nine-hour day the teams hauled a total of 520 yards of material and the six trucks 1384, basing figures on the averages, and this established the trucks averaging from 266 to 275 per cent. more than each team. One understands that the largest trucks were the most productive for this particular work. Several sizes were used by the contractor because these were adapted for other service and were not bought solely for excavation, and they were worked because they were available and were probably as economical as rented trucks would be.

With steam shovel loading and quick discharging the teams probably represent the height of productivity, for the hauls are short and the animals can be worked hard because of the frequent



A 7½-Ton Truck, the Largest Unit in Use, Loading at the Railroad Shovel, Four Sweeps of the 1½-Yard Bucket Being Necessary with This Size Machine to Fully Load It with Excavated Material.

rests. With a more accessible dump the trucks could be worked faster, for the time necessary for positioning them for dumping could be much reduced, and when the heavy grades and sharp turns and the short haul are considered the conditions are not as favorable for the machines as for the animals.

Four Shovels Now at Work.

When the cut was well advanced the change was made in the area to be brought to levels, and with the increase in yardage to be taken out a fourth steam shovel, this also with bucket of $\frac{3}{4}$ -yard capacity, was brought in, and kept in reserve and the other three worked, cutting parallel paths along the hillside. With this addition the number of trucks was increased to 12, one of these being owned by the contractor and the other five rented, and the number of horse teams to 20.

This was practically all the equipment that could be used with the four shovels and with it the yardage of material moved daily was increased from 520 to 800 with animals and from 864 to 1728 with trucks, a total of 2528 as against 1384. The figures stated are approximate averages as taken from the haulage record.

The progress of the work depends on keeping the steam shovels working constantly and having sufficient trucks and teams to remove the excavated material. There must be no more vehicles than will serve the shovels, however, for this would be unnecessary expense. At either dump there is an inspector who

keeps record of the number of loads hauled by each vehicle and directs the drivers where to discharge their loads, that there shall be no confusion or uncertainty and no time lost, and at the cutting the superintendent of the work is in charge in the absence of Mr. Quinn or his son.

The shovels are worked along a path, each having a side and head cutting, one ahead of the other with reference to the outside of the work, with the railroad shovel furthest into the bank, as this will handle twice the material that can be moved with the smaller units. When all within the sweep of the jib has been cut to the level the banks are loosened with bars and picks and in this manner all of the material above the shovels is brought down.

Rock Handled by the Steam Shovels.

The rock is broken by blasting, three steam drills being at work, and the stone is reduced to sizes that can be handled by the steam shovels, for they will handle rock nearly as well as earth if in small pieces. Large stones and small boulders are lifted and put into the trucks, this work being done rapidly, and as these can be discharged by gravity, practically the same time can be made no matter what the load. Large stone cannot be hauled by the wagons. When stone is hauled it is discharged at the dump so that it can be covered with earth and driven over later. This is done to protect the machines and their tires as much possible. The rock haulage is done generally by the trucks owned by the com-

pany, for owners of rented trucks often refuse to haul stone, for there is heavy stress on the bodies, frames and springs when the contents of a steam shovel bucket are dropped several feet, and the machine cannot be favored when time means money.

The work must go on steadily and despite the hard usage the machinery is well cared for. The steam shovel in reserve is ready for replacing any of the others. The small shovels are moved by trucks or horses as the cutting requires and twice a month a set of manganese steel bucket teeth are replaced. The hard work necessitates frequent repairs, and careful inspection is made of both the shovels and the trucks. In the tool house is a stock of parts for the shovels and a mechanic who is both a machinist and blacksmith does practically all of the maintenance work on these machines and the wagons, as well as shoeing the horses.

Repairs Made at Work When Possible.

There is a stock of small parts for making repair to the trucks such as might be from time to time necessary, and whenever practical work is done on the machines by the drivers and a mechanic from the yard garage at Ashton, but major repairs are made at the yard, where a shop and a large stock of repair parts is maintained. The trucks are not garaged on the job, the radiators being filled with a non-freezing solution.

In the event of fitting parts or doing work for which there are no tools available in the blacksmith shop, the machine



A Road Shovel Loading a 7½-Ton Truck at the Most Advanced Point of the Cut. The Size of the Excavation Can Be Judged from the Bank, the Crest of Which Will Be 115 Feet Above the Lowest Level.

shops of the Valley Queen mill can be depended upon in an emergency, and there is little reason for any happening to cause loss of service of the trucks.

The large trucks are in work of this kind the most useful units because the work is paid for by the cubic yard and the 7½-ton machines can be loaded nearly as quickly and discharged as rapidly as the 5½ and 3½-ton trucks, and they can make equally as fast time. But for road building and for other service the smaller trucks are faster and are more practical.

Has Used Trucks for 10 Years.

Mr. Quinn began to use trucks about 10 years ago and he used 3½ and five-ton sizes, increasing his truck equipment until he had 12 Alco machines in 1913. These were used largely in road building, with some horse teams until the declaration of war against Germany, or shortly after, when many of his drivers enlisted and were drafted and he found that he could not replace them with men who could drive. The accidents were numerous and the cost of repair heavy, but the trucks could not be depended upon and loss of service was so great that Mr. Quinn to insure his contracts resumed the use of horses and sold some of his trucks and discontinued the use of others.

His experience was that when drivers had been trained to use certain trucks and could drive them well and economically they had best be kept on the machines they were familiar with and knew, for men who had no experience with a given truck could do much damage were they to attempt to drive it as they had driven others. Good truck drivers are prizes in his estimation and changes are ill-advised unless absolutely necessary.

Trucks Best for General Work.

He has to use his trucks hard because of the work done with them and they cannot be favored. Because of this usage he maintains that the cost of operating a 7½-ton truck will approximate \$30 a day, and this expense will reduce to about \$27 for a 5½-ton truck and about \$23 for a 3½-ton truck.

Because the expense of horse teams has very nearly doubled in the last six years and the work done with them cannot be increased, he believes that trucks are to be preferred for a very large part of general contracting work, but there are some services for which horses are especially useful, where trucks cannot profitably be used.

Mr. Quinn's general plan of operating is to own all the trucks for which he is reasonably certain he will have need in his work, and to rent others as they are found necessary. The rented truck is not as profitable and as a rule the owners, especially if they drive themselves, are not willing to undertake the heavy haulage necessitated by construction, believing that there is probability of quick deterioration.

Trucks Must Be Kept Working.

A contractor must have much equipment that is only used occasionally, some of which will have much value. This is non-productive save for special work and its use will necessarily command a high price in contracts where it may be made

serviceable unless it can be utilized by other contractors, who will be willing to pay for it in preference to acquiring similar property for themselves. This does not apply, however to trucks, provided that work is carried on generally through the year.

Quinn & Son has a quarry and a stone crusher with a capacity of about 250 tons a day, at which is produced much of the stone used in road building within a distance of from six to perhaps eight miles, and a considerable volume of the output is sold and delivered to the city of Woonsocket, six miles north, for which haulage trucks are used a goodly part of each year. In addition to this contracts are made with truck owners for hauling stone at times of the year when all of the machines can be utilized more advantageously. The company also does road repairing in a radius of 25 miles, and wherever its own material can be used advantageously the trucks deliver it.

Accurate Record of Revenue and Cost.

An accurate record is kept of all revenue from and of all expense of operating the trucks and from time to time

MURRAY & TREGURTHA CHANGES OWNERS.

A group of bankers, headed by J. M. Forbes & Co. and M. Douglas Flattery, has purchased a controlling interest in the Murray & Tregurtha Corporation, which has been located in Boston for over a third of a century, engaged in the manufacture of marine motors. The company operates a modern plant situated on the Neponset river, and the new management plans to enlarge the factory and equipment, with the purpose of entering upon the manufacture of tractor and truck engines on a large scale in the near future. This company also owns a controlling interest in the Victory Truck Co.

The present capital is \$1,000,000 preferred and \$1,250,000 common stock. The board of directors is as follows:

M. Douglas Flattery, chairman; Linus C. Coggan, treasurer; Raymond Emerson of the Forbes-Perkins Co.; Otis C. Funderburk, vice president and chief engineer; John A. Murray, president; John F. Perkins of the Forbes-Perkins Co.; Frank B. Sexton, vice president and general



The First Dump for the Trucks, a Quarter Mile Distant, Where an Average of 36 Loads Were Discharged in Nine Hours by Machines, This Being Usual Day's Work.

statements are made to determine the value of each type and capacity, as well as to establish the efficiency of the drivers, who are rated and paid according to their productiveness.

With reference to the Royal mill contract the profit will depend upon the use of the trucks. The average team of horses, cart or wagon and driver can be hired for from \$10 to \$12 a day. Using means for loading and unloading that will afford the same time economy as for the trucks, with the only factors favoring the machines the greater load capacity and speed, and hauling twice the distance, the average haulage of the trucks, without considering individual truck capacity, is 263 per cent. as compared with the teams.

The filling of the original dumps for the excavated material has been completed and the trucks and wagons are now hauling to two other tracts approximately the same distance. This contract affords an admirable opportunity, for judging the relative productiveness of trucks and teams on short hauls, and from any angle, the results are favorable for the machines.

sales manager; William P. Thurber, president of the Walter Baker Chocolate Co.; Guy Tressler, factory manager; Walter H. Tufts, Jr., vice president of the American Trust Co.; Roger S. Warner, counsellor-at-law.

TRUCKS INCREASE IN WEST INDIES.

A recent capitulation shows an increasing use of motor vehicles in Martinique, French West Indies, the registration of commercial wagons being 69 and passenger cars 620. Fully one-fourth of the trucks are used in and about the sugar factories and distilleries, and since these industries are usually located in the interior at some distance from a sea port and are reached only by roads which, though good, are over high hills, the advent of this means of transportation has been a great benefit. The cars also carry supplies to the settlements in which the factories are located.

The postal service in Martinique is also now maintained by motor cars, which carry passengers as well as the mails.

BRITISH MERGER FOR MASS PRODUCTION.

London, England, Dec. 5.—The American Chamber of Commerce here reports a merger of British motor interests involving a capital of £6,000,000 (nominally \$30,000,000), this being the first important step towards mass production in this country.

The company which has been formed will be known as Harper, Bean, Ltd., and includes the firms of A. Harper & Sons & Bean, iron founder of Dudley; Vulcan Motor & Engineering Co., Stourport; Swift of Coventry; the British Trading Corporation; Hadfields, Ltd., steel manufacturer of Sheffield, as well as a number of subsidiary manufacturers of electric lighting and starting sets, jigs and tools, radiators and accessories, the manufacturers of all component parts of the motor car being thus controlled by the amalgamated concern.

The American Chamber of Commerce understands that the designs have been standardized and that production will be commenced immediately at the rate of 50 cars a week in January, to be increased to 300 a week in July; to 600 a week the following December; rising ultimately to 2000 a week in 1923. The production will be divided so as to include 50,000 small cars, 25,000 medium cars and 25,000 commercial vehicles.

The company will set aside 500,000 of its ordinary paid-up shares as a benevolent fund for its employees and their dependents, the income from which will be distributed by a committee of six directors and six employees.

WILL BUILD A TRUCK FOR FARM HAULAGE.

Manufacture of a two-ton truck that will sell for \$1995 f. o. b. at the factory has been begun by the Jones Truck Manufacturing Co., Sioux Falls, S. D., and production in considerable volume is planned. The construction units include a Buda engine, equipped with a Bosch magneto and Stromberg carburetor; a Borg & Beck clutch, Grant-Lees transmission gearset, and Spicer drive shaft and universal joints. The chassis will have 132-inch wheelbase and will be equipped with 32-inch wheels forward and 34-inch wheels rear. The weight will be approximately 3380 pounds.

SHILTS IS ASSISTANT SECRETARY OF GOODYEAR.

W. D. Shilts, who has been associated with the Goodyear Tire & Rubber Co. for the past 14 years, has been made assistant secretary. His first engagement with the Goodyear company was as stenographer and personal secretary of C. W. Seiberling, who was then manager of the automobile tire department. He was then just graduated from Mt. Union college and intended to engage in the study of law in Cleveland.

After four months he was placed in charge of the correspondence of his department. At the end of two years he was confronted with the problem of deciding whether to continue with the Goodyear company or of carrying out his original plan of fitting himself for the bar. Realizing that a continuance with a concern of the scope of the Goodyear



W. D. Shilts, Assistant Secretary, Goodyear Tire & Rubber Co.

Tire & Rubber Co. would open unlimited opportunities, he finally decided to remain. Since that time his advance has been rapid. He was soon made assistant to G. M. Stadelman, and chosen as head of the automobile tire department, then selected as manager of the salesmen's department. His broad vision, coupled with exceptional executive ability, quickly brought further recognition,

and he was made chairman of the board of control of the company. His latest promotion has been to the office of assistant secretary, and will continue to act as chairman of the board of control.

PRODUCING TRAILERS ON LARGE SCALE.

The Trailmobile Co., Cincinnati, O., is just completing a large, modern factory at Oakley, a suburb of that city, which will be used for the production on a large scale of trailers of a wide variety of types. It is claimed that this will be the largest in the world engaged exclusively in the making of trailers for motor vehicles and has been planned so that extensions can be made rapidly to meet the further increasing demands of the business.

The past year has been a big one in every way for the trailer business and especially for the Trailmobile Co. Thousands of truck owners, educated in the economies of trailer hauling by the use to which they were put by all the leading armies in the world war, have turned to it for commercial use.

Great corporations, with vast amounts of hauling to do in the cities, have taken up the semi-trailer. Fleets of 150 units or more are now in operation. Statistics in states that require registration indicate increases of as much as 170 per cent. in the use of trailers during the past year.

Since the close of the war, during which it supplied in the neighborhood of 10,000 Trailmobiles to the government, the commercial business of the Trailmobile Co. has been greatly on the increase.

NEW PLANT FOR KELLOGG MANUFACTURING CO.

The Kellogg Manufacturing Co., manufacturer of power tire pumps and other automotive equipment, is erecting a new plant at Rochester, N. Y., on a site on the main line of the New York Central railroad, where it will have exceptional shipping and receiving facilities. The works will include a foundry which will produce all the castings required and will insure against delays that were experienced with contract work outside the plant. The company expects to turn out all the production planned for 1920 in the new works.



The New Plant of the Trailmobile Co. at Oakley, a Suburb of Cincinnati, O., Which Is to Be Used Exclusively for the Production of Semi-Trailer and Trailer Units, Claimed to Be the Largest Factory of the Kind in the World.

New York Truck Show Largest and Best Ever Staged

*Attendance Limited to Buyers by Location,—
Transportation Conference Fails as Attraction,—70 Manufacturers Exhibit 288 Vehicles
Nearly All Conventional—Few New Machines*

NEW YORK'S exhibition of trucks, a division of the annual show of the National Automobile Chamber of Commerce, the first of the kind held by the manufacturers' organization since 1913, was the largest ever staged in this country.

As a display it was distinctly creditable to the industry. To what extent it was productive in actual sales cannot be stated without a statement from each exhibitor.

From one point of view the exhibition was experimental. It was at the mammoth armory of the Eighth Coast Artillery at the Bronx, a long distance north of the Grand Central Palace, where the pleasure cars were shown. Despite the facilities for rapid transit, one may assume that those who visited the show were thoroughly interested in power vehicle transportation.

The armory covers an area 600 by 300 square feet, and the greater part of the great drill shed is clear, without a post. Though more than 300 machines and

trailers were shown on the floor, and the stands of the accessory manufacturers were ranged along the side walls and at one end, the show was far from congested. As a matter of fact probably twice the number of machines could have been placed as close as the cars were arranged at the Grand Central Palace.

Visitors Did Not Throng Armory.

In so large a structure the number of visitors appeared discouragingly small at almost any given time. The total for each day run well into thousands, but the movement was gradual and the greatest activity might be paralleled in the average truck salesroom. But the attendance is not necessarily a measure of results, for trucks are frequently bought in numbers, instead of singly as cars are sold.

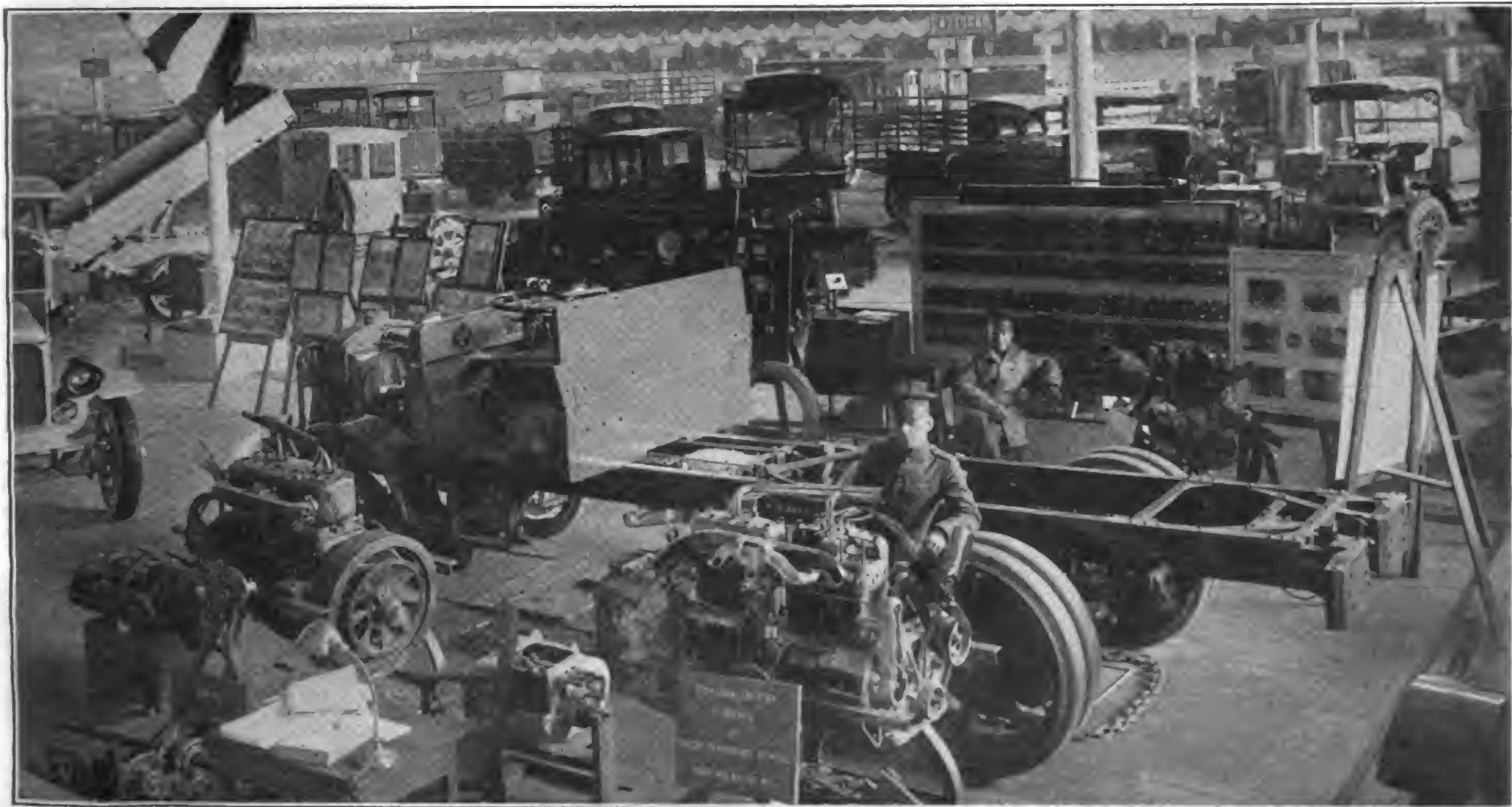
The conditions were extremely favorable for buyers who wanted attention and uninterrupted conferences. The salesmen had opportunity to serve the visitors. Like all exhibitions, there were exhibitors who expressed satisfaction

and disappointment. As a rule opinions were based on experience with combination shows of cars and trucks, and numbers of visitors rather than buyers (for the dealer regards all inquirers as prospects), was the basis of judgment.

Staging the two divisions of the show so far apart, with the cars central and the trucks miles distant, would necessarily limit the attendance at the armory to those having real interest. But to attract those who are engaged in or concerned in highway vehicle use the show committee planned a transportation conference with afternoon and evening sessions open to all in the building.

Conference Plans Well Developed.

The plan was well developed and had many decidedly interesting features. It was given wide publicity. The sessions were not, as a rule, well attended, although endeavor was made to promote interest. The subjects were well presented and the discussions were undoubtedly beneficial. Without the widely diversified papers and addresses the illus-



A Section of the Drill Shed Floor at the Eighth Coast Artillery Armory at the Bronx, with the Exhibit of the United States Army Motor Transport Corp in the Foreground. This is the First Time the Government Ever Participated in an Exhibition of This Kind.



A Truck Equipped with "Full-Floating" Wheels at the Stand of the Jaxon Steel Products Co.

trations, both lantern slides and animated pictures, were liberally educative, and could not be seen elsewhere.

One occasion for criticism for the first two days of the week was the low temperature, for the heating plant was never intended to warm the drill shed to the degree desirable for an exhibition hall, although adequate for the needs as an armory. The chill of the cement floor was pronouncedly noticeable if one were to stand on it for a considerable period. Later on, after the building had been well heated, the temperature was reasonably maintained.

Future Shows Cannot Be Forecasted.

One cannot predict whether or not the show will be continued to the 1920 plan. No decision can be reached until the show committee receives report from the exhibitors and learns facts that will be sufficiently definite to base judgment. There is reason to believe, however, that the volume of business will be the determining factor, and yet few can accurately estimate the productiveness of exhibition.

One might assume that were a similar show organized a year hence there would be larger attendance and more material

results. Exhibitors want to sell trucks direct or make agency contracts that lead to future sales. Either would be satis-



The Exhibit of the Commerce Motor Car Co. of Light Trucks All Equipped with Pneumatic Tires.

factory, without doubt, but because of the large expense incidental to such shows the question for each manufac-

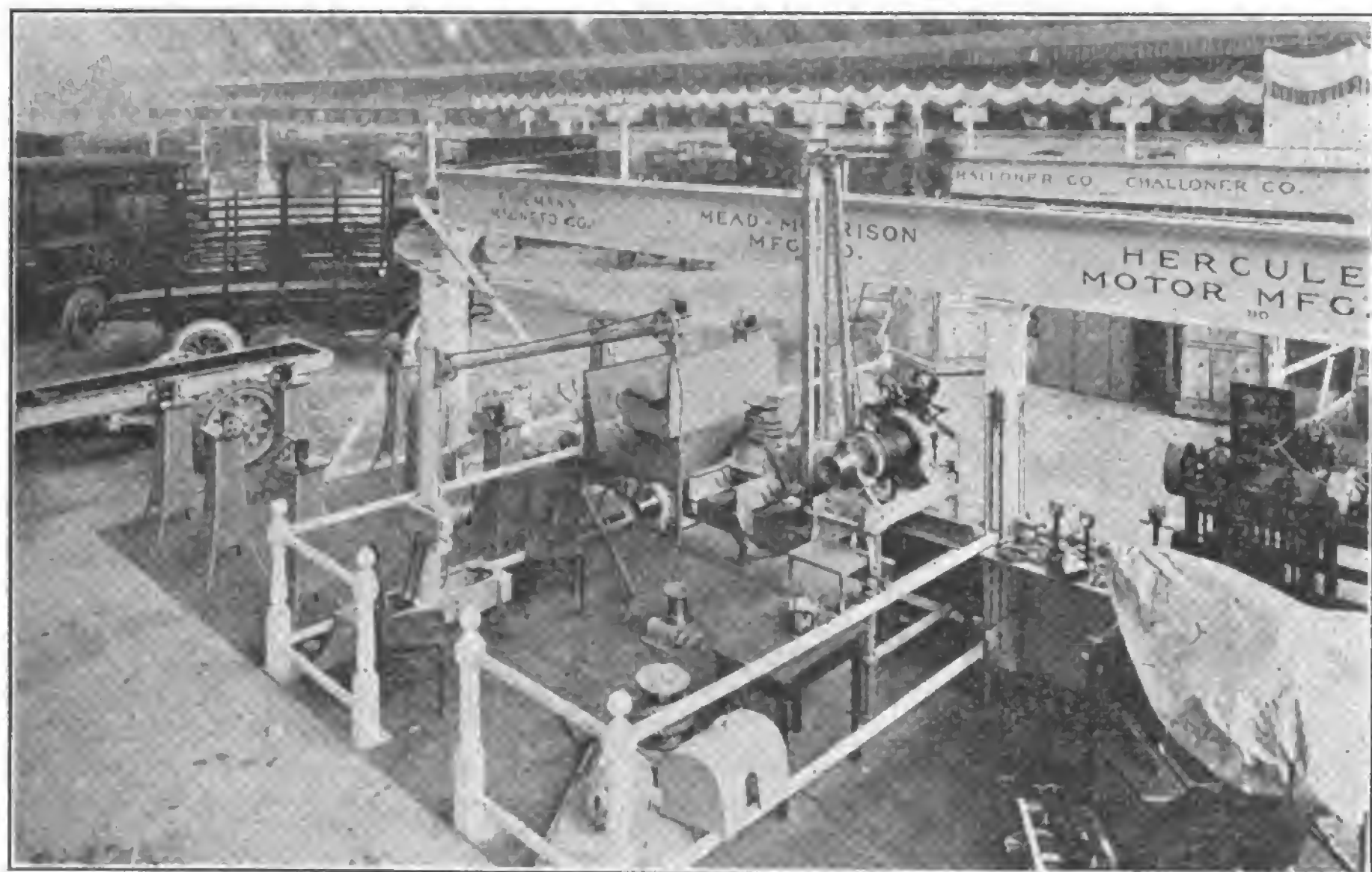
turer to determine is whether or not the money could be more advantageously expended.

The transportation conference was the first endeavor of the industry, as represented by the National Automobile Chamber of Commerce, to associate with a show sources of information of such importance that truck owners would be justified in attending every session. Had the value of the conference been fully realized the attendance would have undoubtedly been much larger.

In a city as large as New York, with probably close to 40,000 trucks owned by possibly 15,000 individuals, one would naturally expect that thousands would be present at meetings devoted to their interest. Were the show and the conference sessions central, as the passenger car exhibition, a very good idea of the possibilities of similar conferences could have been gained.

New Machines Were Few.

The show of trucks was extremely in-



A Corner of an Accessory Section, the Display of Mead-Morrison Truck Winches at the Center, Between Hercules Engines and Elsmann Magnetos.

teresting to those who regarded it from the viewpoint of mechanical progression and development. There were comparatively few trucks that had never before been produced commercially. As a matter of fact a standardized design is regarded as an evidence of sound engineering and the latest productions of some of the best known makes differ with the older only in minor details. When a truck chassis has been approved by a well organized engineering department changes are not made unless there is sufficient reason.

In this connection one of the best known manufacturers first exhibited trucks at New York in 1911, and made deliveries late in the spring of that year. Since then the design has been continued and was included in this exhibition practically unchanged. The company has built another size truck for several years, but this, too, has not been changed. These statements are made to establish that one of the best of sales arguments is that a design has been so satisfactory that modifications have been unnecessary.

Nearly All Built of Specialized Units.

In the exhibition, large as it was, were



The Stand of the Atterbury Motor Car Co., with the Complete Series of Trucks Equipped with Special Bodies.

few makes of which the principal construction units are built by the truck manufacturers. A very large proportion of the machines were constructed of products of specialists. This statement applied to the entire series built as often as to a single vehicle. But one might note that many of these so-called assembled trucks were designed with extreme care. In fact, in a number of instances quite as much attention was given to assembly detail as was given to the manufacture of construction units, and these machines can be regarded as distinct industrial development.

With reference to the transmission of power, the majority of chassis were driven by worm shaft and worm wheel, this being especially applicable to the larger sizes, but there was a large gain made in the use of internal gear transmission of power, these two systems being generally used. The internal gear has been adopted by many manufacturers for small vehicles, principally from the fact that it is highly efficient and it is not as expensive, which lessens the prices and appeals to those who are limited as to their investment in transportation equipment.

Several of the manufacturers continue the use of double side chains and sprockets for power transmission, maintaining that nothing has as yet been produced that is superior, and several of the smaller trucks are driven by bevel gears and double reduction gears.

Manufacturers Displayed 288 Chassis.

The total number of makes of trucks in the show was 70, and these manufacturers displayed 140 chassis and 148 complete vehicles, which were classified as follows: 1000 pounds, 12; 1500 pounds, 22; 2000 pounds, 27; 3000 pounds, 60; 4000 pounds, 42; 5000 pounds, 38; 6000 pounds, 9; 7000 pounds, 40; 8000 pounds, 6; 10 000 pounds, 27; 12,000 pounds, 4; 15,000 pounds, 1.

Considering these figures for a moment one will note that 163 of the chassis were of two-ton rating or less, and that 125 were from 2½ tons to 7½ tons. This may not be a demonstration of the ratio of chassis sizes built by the industry, as

the Ford machines were not displayed, and the announced production of this concern for 1919 was originally planned as 100,000 trucks, but aside from this make it may be regarded as a very fair reflection of the ratios of sizes generally built.

In addition to these trucks three trailer manufacturers showed 20 different sizes of trailers, both semi-trailer and four-wheeled, this bringing the total number of vehicles of all kinds up to 308.

Machines Seen for First Time.

There were several chassis which were seen for the first time, and included in this classification was the Autocar, a 3½-ton machine, equipped with a four-cylinder engine, which is the first machine built to a design other than the two-cylinder Autocar truck driven by double re-

duction gearing that has been standardized for a number of years. The new truck is constructed with the engine under the cab.

Another interesting new construction was the Kelly-Springfield "overhead drive," which is an internal gear driven rear axle, dropped in the center with the jackshaft mounted above the dead axle, the housing of the differential gearset being in the dropped central part of the I beam load carrying member. The driving shafts extend to the housed internal gears, and on these shafts are the service brake drums. This form of transmission is for the present built only for the 3½-ton chassis.

Another interesting application of the internal gear drive was seen in the three and five-ton Walter trucks, which have dead rear axles, with differential gearsets and jackshafts suspended from the frames and protected from stresses and vibration by the springs. The service brake shoes clamp on the differential gears. Each shaft of the jackshaft is fitted with a double universal joint, which compensates for any variance from alignment of the frame caused by the unequal distribution of the freight.

A new truck of 3000 pounds capacity was exhibited by Graham Bros., Evansville, Ind., this being designed especially for farm equipment, and intended to be sold with standardized service with the new Graham tractor, and a power cultivator that is convertible into a light tractor. This truck is internal gear driven.

The new Federal 2000-pound truck was shown for the first time, this being a highly perfected type with a Liberty truck type engine and driven with a two-section shaft, with a four-speed ratio transmission gearset mounted amidships and a semi-floating worm shaft and worm

(Continued on Page 35.)



Where the J. C. Wilson Co. Showed a Full Series of Wilson Chassis, Some Equipped with Stock Bodies.

CHICAGO'S TRUCK SHOW ON BIG SCALE AT AMPHITHEATER

CHICAGO, Jan. 14.—Preparations have been completed for the annual automotive exposition of the National Automobile Chamber of Commerce in this city, and there is abundant reason to believe that it will be the largest event in point of number of exhibitors ever seen here. It will be the twentieth annual show, and it will be organized on practically the same plan as that just closed in New York City, the passenger cars being shown at the Coliseum and the First Regiment armory, and the trucks at the International Amphitheater, so that there will be practically three exhibitions under the same management.

The truck division has always been in combination with the passenger car display, the cargo carrying vehicles being seen at the armory, which is a block distant from the main building. A number

stead and 42nd streets, a spacious structure, which has been for a number of years utilized for large exhibitions.

The Amphitheater is by no means as large as the great armory used for the truck show at New York City, but it has in the main arena and the two wings something like 120,000 square feet of floor area, and in the event of need changes can be made so that probably all who desire can obtain stands.

The truck exhibition building is widely separated from the Coliseum and the First Regiment Armory, however, although there is excellent rapid transit service between the two, and whether or not there will be a general movement of the show visitors from the one to the other cannot be predicted with certainty.

The Amphitheater, however, is well known, and at it attractions like the

sonably certain to possess another. Yet the owner of trucks, unless he is directly engaged in highway transportation, does not as a rule understand their economy, as he does not accurately determine their value to him. Because in the majority of cases there is no direct revenue the operating cost is regarded as expense.

Transportation Conference a Feature.

Realization of this fact and desiring to open to all who may desire it specific knowledge of haulage from various angles, a Transportation Conference has been planned which will take place each afternoon and evening in connection with the truck show, and to which all show visitors will be welcomed. The sessions will take up the various subjects systematically and they will each deal with a series of three or four, to be followed by



The International Amphitheater, at Halstead and 42nd Street, Well Known and Conveniently Accessible, Where the Truck Show of Chicago's 20th Annual Automotive Exposition Will Take Place.

of cars have always been shown in the armory and a considerable part of the accessory exhibits, so that the attendance at the truck show has always been reasonably satisfactory when both were held simultaneously.

The last exclusive truck show in Chicago was in 1913, and thereafter until last year, when a combination exhibition was organized by the Chicago Automobile Trade Association, no display of trucks was authorized by the National Automobile Chamber of Commerce.

Show at International Amphitheater.

This year, however, the general plan was to hold both truck and car shows at the same time, following the show of 1919, which was under the management of S. A. Miles, but the number of car exhibitors was so large that both buildings were assigned to this division, and the show committee authorized the rental of the International Amphitheater, at Hal-

stead and horse shows and other public events have frequently taken place. By this is meant that the location is well known and it is reasonably accessible, so that it will not be inconvenient for those who are really interested in trucks.

The experience of truck sales organizations is that the average man is not curious about machines. He regards them as a business necessity and, aside from the general desire to obtain the largest value for his money there is no appeal to his desire for pleasure or comfort. For this reason few men visit shows of trucks unless they are interested in buying.

There are of course, such men as purchasing agents, who avail themselves of opportunities for studying the qualities of machines that they may not at the time be authorized to purchase, but this class is comparatively few. Every man who can afford a car is a logical prospect. Every man who owns a machine is rea-

discussion from any angle that may be proposed.

These papers or addresses will be illustrated by stereopticon views and moving pictures, and there will be illustrations of practically every character of work that can be done with power vehicles, a collection of pictures that will probably not again be seen having been obtained especially for the benefit of the people. The programme of the sessions, which will be presented by men who are regarded as authorities, is as follows. One will note that to some extent it deals with the same subjects that were presented at the Transportation Conference in connection with the New York truck show:

The Programme for the Sessions. Monday, Jan. 26:

AFTERNOON.

"Merchandising Motor Trucks."
"The Trade Segregation Plan."

(Continued on Page 40.)

ECONOMY OF TRUCK FREIGHT TRANSFER AT CINCINNATI RAILROAD TERMINALS

*Move 600 Tons and Release 80 Cars
a Day with 15 Machines, Cut Handling
Cost 50% and Reduce Time of Yard
Movement from Days to Few Hours*

TERMINAL transfer is always a problem with a railroad, and the larger the system the greater the number of complications that must be dealt with.

Speaking broadly, the railroad is probably the best organized of any form of transportation. The system or plan of operating has been developed from experience with the object of economizing cost, and, of course, affording the degree of service that will satisfy the public.

Railroad rates are assumed to be all that can be charged, but these are limited by the Interstate Commerce Commission. There is no guarantee as to time required for transportation, and because of the regulations with reference to less than car load lots there is no certainty of time of shipment after delivery at the terminals, for, as a rule, the freight of

and delivered with minimum handling and material saving in time.

Where Freight Transfer Is Heavy.

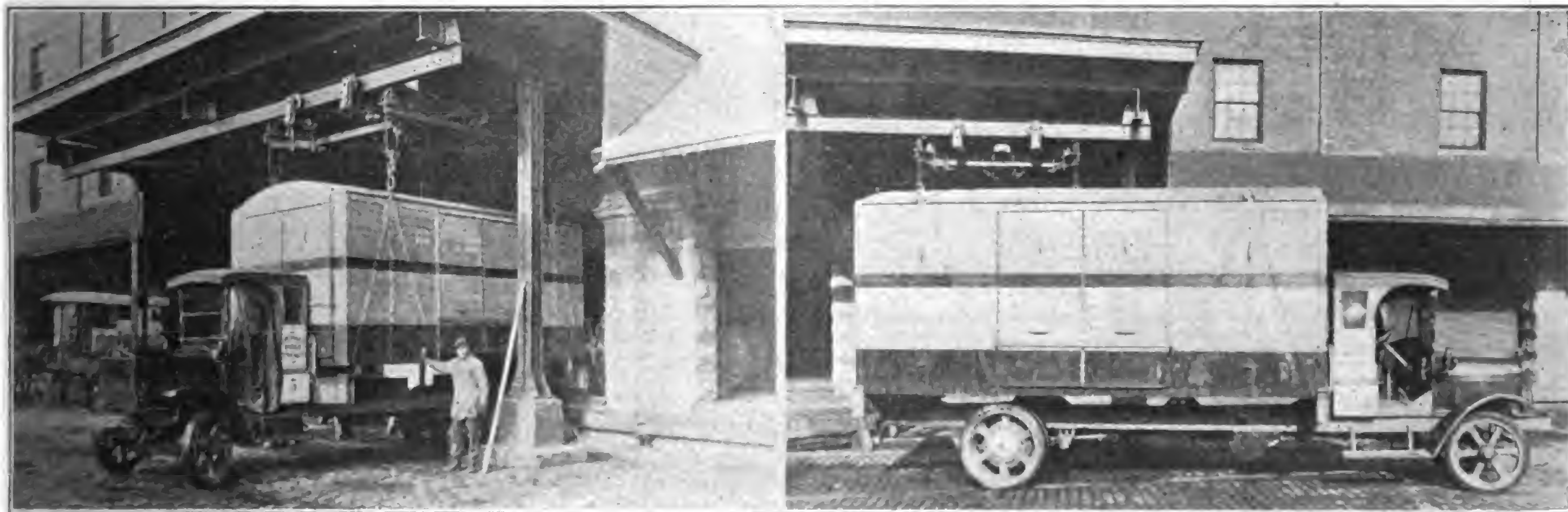
Some of the large interior cities like Pittsburgh, Cincinnati, Indianapolis, St. Louis, Kansas City, Dallas and others, are the terminals of numerous railroads and necessarily these are points of transshipment for freight, especially the small consignments.

One of the most interesting conditions is at Cincinnati, where has been developed a system of freight transfer which is claimed to be original with that city and which has been productive of remarkable saving, and, strange as it may appear, this saving has been made possible by the use of power trucks.

In this utilization of machines an endeavor has been made to expedite the

The city is on the main lines of several important railroads and it is the terminal of a number of others. As the city increased in population and the railroad traffic was developed the railroad facilities did not keep pace with the needs and eventually congestion in practically every yard was such that traffic managers so far as possible preferred other routings and railroad executives found that even with direct shipments delays that were not paralleled elsewhere were probable.

This was particularly true of freight from the East and Northeast to the West and Southwest. No matter what the progress might be, at Cincinnati the freight was limited in movement, as is the flow of sand through an hour glass. This condition existed pronouncedly with



Demountable Body Equipment of the Cincinnati Motor Terminal Co.: At Left, the Trolley Chain Hoist for Handling the Units, Lowering One on a Truck Chassis; at Right, a Loaded Body Being Moved from One Railroad Freight House to Another.

this classification for any one destination is held until there is a full car load.

Where there is a single railroad service in a city or community and the freight can all be received at and delivered from one terminal, the proposition is comparatively simple as compared with cities where there are several railroads, each having independent freight yards.

In such cities, where the freightage is sufficient to justify inter-yard trackage, so that cars may be transferred from the one company's tracks or yard to another is not infrequent. This is true of some of the cities that are located on the Great Lakes and have both railroad and water line service. But comparatively few of the larger cities have what may be regarded as union freight yards, where all of the freight may be received

transfer of freight with the least loss of time and with minimum labor, but nothing has been done to coordinate the operations of the various railroads. This would no doubt be the better way of dealing with the condition because once a union freight yard was established there would be much larger economies, which would be insured for all time, but this change would not be possible without the expenditure of money that is now regarded as almost prohibitive.

Traffic Congestion at Cincinnati.

Cincinnati is an extremely important city industrially and its receipts of raw and semi-manufactured material and supplies of all kinds reach an enormous tonnage annually, while the shipments of products of all kinds are very large. There is considerable commerce on the Ohio river steamer lines as well.

reference to miscellaneous shipments, classified as less than carload lots, which were necessarily transferred at this point to other railroads. Delays of miscellaneous freights was the rule instead of the exception, and the loss of a week in Cincinnati was not exceptional.

How the Transfer Was Made.

Just what ratio of the freight was transferred cannot be stated, but the following is not an exaggerated statement that will fairly illustrate the condition that existed until less than four years ago. A car load of several consignments might be received at the Pennsylvania freight yard, where it was unloaded and that part of the cargo to be transhipped was located at different places in the terminal, where each lot remained until a load for a "trap car" accumulated. This was one handling that involved more

than simply removal from the car to the platform.

The "trap car" was simply a single unit used for transferring freight from one terminal to another, and loading it necessitated the second handling. After the loading the car was switched from the one yard to another, the time for transfer being from a few hours to several days. If it were destined for the Baltimore & Ohio railroad or the Big Four, or any other of the freight yards that could be reached by switching, on arrival of the car at the yard the car was unloaded and the shipments again unloaded and located for accumulation, this requiring the third handling. Later on, when car loads for the different points were made up, the freight was handled for the fourth time.

New System Developed by Railroad Men.

As may be assumed this condition was extremely slow and costly because of the expense for labor and transfer, and especially irritating for the shippers and consignees, which was reflected by innumerable complaints. The railroads were not inclined to make any change,

(At first the transfer of freight was largely experimental. The trucks were the usual platform type, but the need of economizing the time of the trucks and to have the work to go on as uniform as possible led to the use of demountable bodies and the investment of more capital in additional equipment at each of the sections of the freight houses set aside for the loading and unloading of the trucks.

Instead of placing the freight indiscriminately in the houses when unloaded, parts of the sheds were designed for the small consignments, which systematized handling to a considerable extent. This was imperative when demountable bodies were used, for these were of necessity located at specified places, accessible for the trucks, and yet as close to the tracks set apart for the cars that hauled miscellaneous loads as was practically possible.

Expansion of the Equipment.

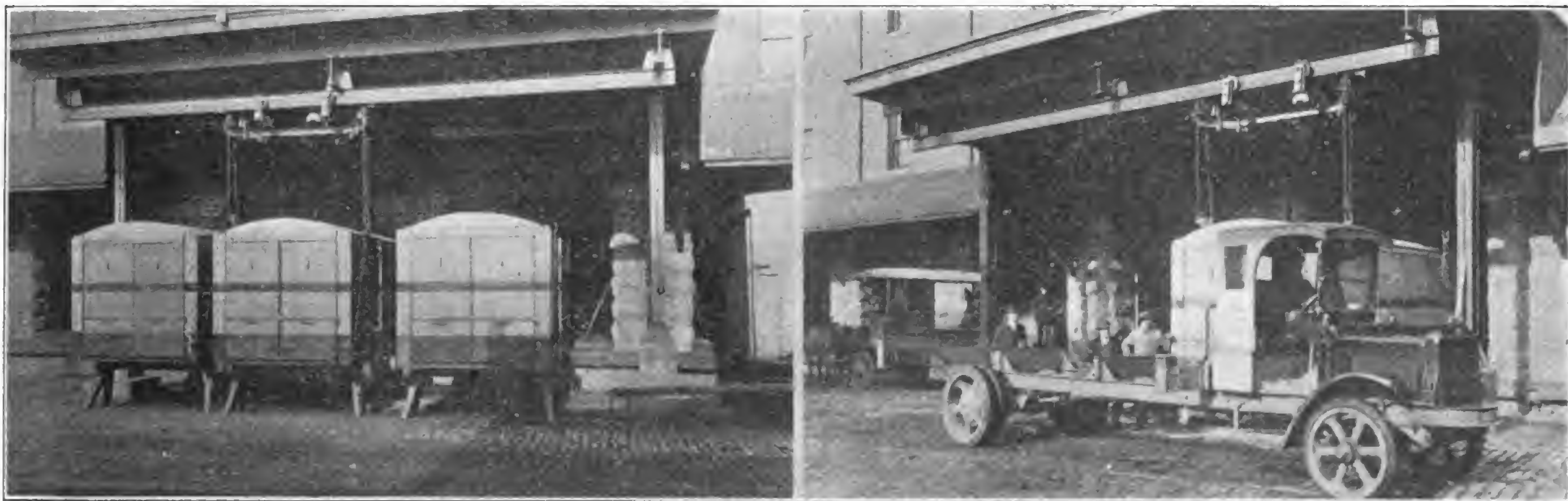
The history of the development is especially interesting, for different experiments were made, all of which resulted in perfecting the equipment, the organization and the system of operating, but

The bodies are constructed of wood, with corrugated steel roofs, resembling a freight car body, having heavy stringers below the sills that carry the decks, and these stringers are so located that they fit at the ends of the steel bolsters, retaining the bodies on the frame so there is no transverse movement. Longitudinal movement is prevented by clamps by which they are secured.

Near the ends of the bodies at the sides are heavy steel straps that extend from the roofs to the sills, the upper ends of the straps terminating in large hooks. From the tops of the straps diagonal steel braces extend to the sills. These strengthen the frames and sides of the bodies and take the stresses of the weight. The bodies are of such size that they will contain four tons of bulky light freight. At the ends and sides are swinging double doors that may be secured by padlocked bars. As may be surmised, the bodies are so designed that they need not be reversed when positioned.

Hoists Remove and Replace Bodies.

At the different terminals is what may be termed a bay, covered by a roof, and



The Patented Bays, Hoist and Bodies and the Special Truck Chassis Fitting: At Left, Three Transfer Units Supported on Horses, with the Chains of the Trolley Hoist Attached to the Hooks of the Body Straps; at Right, a Chassis with the High Steel Bolsters on Which the Body Is Secured by the Side Sills and Clamps.

or at least did nothing for years, until finally the delays were so pronounced that the Cincinnati Motor Terminals Co. was organized, largely through the initiative of B. F. Fitch, formerly a railroad man, who believed that a large saving of time and labor could be made through the transfer of the freight by power truck instead of by car.

First of all this meant convincing the railroad executives that their own methods and organizations could be materially improved upon, making investment in power trucks and equipment, and operating them so efficiently as to justify continuance of the contract, and so economically that a profit could be returned the stockholders in the enterprise.

Experiment Determined Possibilities.

Fitch studied the conditions carefully and then investigated the possibilities of utilizing trucks. He knew railroads, but he had to learn much with reference to the use of the machine. He made a proposition to the railroads and he was eventually authorized to make experiment. This was four years ago, when with two White trucks the company began operations.

this cannot be related now. The company today is operating 15 White trucks and approximately 200 special type bodies, and it serves every railroad and makes a large part of the transfers of less than car load lots between the different railroad terminals in Cincinnati.

The company is profitable and it has in very large measure eliminated delays in transfer of shipments, a detail which will be referred to later. At each railroad terminal a section is reserved for the location of the demountable bodies in which the freight is transferred, and at this is special hoisting apparatus by which the bodies are raised from and lowered on the truck chassis, this being operated by electric motors.

[The trucks are used for transferring the bodies, always loaded, from the one terminal to the other, and there is no necessity for moving empty bodies unless there may be a special reason for this. One will note from the accompanying illustrations the unusual but business-like machines and bodies.

Special Demountable Type Bodies.

On the main frames of the truck chassis are placed heavy angle steel bolsters.

under this roof is a structure of angle steel that supports a pair of trolley rails. On these rails is a hoist that has four chains, and these have ring ends that may be caught in the hooks at the upper ends of the vertical straps at the sides of the bodies. These hoists are operated by electric motors and, of course, there is precise control.

At each terminal not less than three bodies may be positioned. A truck will back to the platform, the rings of the chain hoists are caught in the hooks, the motor is started and the body is lifted clear. The truck is moved from under the body and supporting horses are placed under the body as it is lowered to the level of the platform. The rings of the hoist are cast off and the hoist is moved on the rails to a loaded body that is to be transferred to another terminal. This body is raised, the horses removed, the truck backed under and the body is lowered and clamped and the truck is moved to another terminal, where the body is removed and another taken on. Large Number of Body Units Necessary.

The operating plan is to have a sufficient number of bodies at each ter-

minal to take loads for others, and these are loaded as the freight is received. The volume of freight cannot of course be forecasted, but the general movement is known and the trucks are operated to meet any requirement that may arise. The hauls between terminals are comparatively short, but trucks are kept moving so that the mileage for each for a day will be surprisingly large.

The ratio of trucks to bodies is about one to 14, which allows a sufficient reserve for any exceptionally large movement of freight. The haulage might be likened to shuttle work. The time required for loading and unloading the bodies is not material for this work does not govern the movement of the trucks. The tonnage hauled in a day will differ largely, for while the bodies are rated at four tons, as a matter of fact as much as $9\frac{1}{2}$ tons have been carried in them.

Following a Typical Transfer.

Following out a shipment of freight, the operating plan can be better understood. Assume a car load of miscellaneous consignments is received from Detroit at the Baltimore & Ohio freight

terminal. That part that must be transferred to the Pennsylvania road is loaded into a Pennsylvania terminal body; that part for the Big Four road is loaded in a Big Four body. When the bodies are filled the doors are closed and sealed by the railroad employees and the bodies are transferred direct to the Pennsylvania and Big Four terminals. There is loading from the car to the truck body at the Baltimore & Ohio terminal and loading from the truck body to the car at the Pennsylvania or Big Four terminal—two handlings against four as formerly, and the transfer is usually made in a few hours, where from three to even seven days with car transfer was not unusual. One can understand the material economy of labor and time and the absence of congestion, to say nothing of the material saving.

The movement of the trucks cannot, because of the variability of the volume of freight, be systematic in the sense of a definite number of transfers from the one terminal to another, but they are operated by a dispatcher at the main office, much the same as a dispatcher di-

rects the movement of trains. There can be no definite schedule, but the plan is to have the first loads of the day ready for moving at 8 o'clock each morning, and whenever loads are in readiness the dispatcher is notified and trucks are sent for them.

Large Economies with the System.

Now with reference to the savings to the railroads. This has been shown in terms of time and labor in the actual handling and the satisfaction of the shippers, but it is better realized when one understands that estimate is made by railroad authorities that the transfer by truck saves more than 300,000 switch cut movements a year, or approximately 1000 switch cuts every working day. Statement is also made that 80 freight cars are released daily for main line traffic that would otherwise remain in the freight yard for "trap car" service. As a freight car is said to be worth from \$60 to \$90 a day, the savings to the railroads from this item alone is of large proportions.

Another fact that is of prime importance is the reduction in time for transfer

net revenue would be larger a unit operated. Statement is made that the company expects within the next few months to handle the full volume of freight transferred.

The Cincinnati Motor Terminals Co. is claimed to have an investment in equipment, time and experience that represents about \$600,000, and to handle the entire freight transfer of the city railroad terminals would necessitate increasing this by at least the cost of the trucks, for nearly double the number now operated would be necessary. Its garage facilities are now practically adequate for this expansion. The operating force would be increased to meet whatever demand might be made for trucks.

Company Maintains Its Equipment.

The company maintains its trucks and makes its adjustments and repairs, there usually being little need for withdrawals from service save for overhauls. By careful attention the service time lost is comparatively small. One will note that the operating plan utilizes the trucks to what may be regarded as the greatest degree of productivity. Full loads are car-



Interior of the Garage of the Cincinnati Motor Terminals Co., Showing Two Lines of Truck Chassis, Most of Them with Bodies Mounted. The Company Now Operates 15 White Machines and Approximately 200 Bodies, Transferring the Units Between the Railroad Terminals, Always with Full Loads Weighing from Four to $9\frac{1}{2}$ Tons. The Company Transfers 600 of the 1100 Tons of Freight Moved Between the Railroad Yards Each Day.

of freight. Under the old system the transfer time per ton mile was 12 hours and 18 minutes, but with the trucks the transfer time per ton mile has been reduced to $2\frac{18}{100}$ minutes.

Handles 600 Tons of Freight Daily.

The United States Railroad Administrator has also stated officially that in addition to the time saved there is also an economy of 50 cents a ton mile over and above the collateral savings on cars and switchings. Under the current conditions the total freight transfers in Cincinnati approximate 1100 tons a day. Of this the Cincinnati Motor Terminals Co. is now handling about 600 tons, at a ton rate of 80 cents, the railroads furnishing the labor for loading and unloading.

This summary shows that the trucks will average 40 tons of freight each of the general transfer, and the income a truck on the basis of the price paid is an average of \$32 a day. There is prospect of increasing this tonnage in like ratio at least 100 per cent., but this would necessitate increase of equipment, but at the same time the overhead cost would be correspondingly reduced, so that the

ried and there is no dead mileage save from the garage to the terminals in the morning and when returning at night, which is probably as low as is practical.

If the service were operated by the railroads there is no reason to believe it would be more economical, nor would it be as economical unless the company were jointly owned by the railroads and the profits divided among them in ratio to the investment. There would be no economy in independent operation of trucks by each railroad, and this would mean a joint operating company. As it is now there is the fullest degree of co-operation and the railroads benefit very largely.

There is no question that the general plan of operation could be applied to any similar need of transportation companies, and the intention of the company is eventually to operate in every city where the conditions necessitate the transfer of freight from the one railroad to the other. The entire system, which is the development of the inventions and original thinking of Mr. Fitch, has been

(Continued to Page 42.)

The Tenth



3.2 Ton operated by H. J. Heup, Hales Corners, Wis.
Hauling milk



2 Ton operated by Oklahoma Furniture and
Mfg Co., Oklahoma City, Okla.



Operated by Mistele Coal and Coke Company
Detroit, Mich.



5 Ton operated by Brownell & Field Co., Providence, R.I.



2 Ton Federal operated by Mr. Eastman, San Diego, Cal.
Eastman Fruit Co.



*This is the sign of the
"Tenth Year Federal,"
a sign significant of ten
years of success in every
field of truck transpor-
tation.*



2 Ton with stake body, Columbia Motor Co.



2 Ton operated by Milwaukee Woven Wire Works,
Milwaukee, Wis.

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

Year FEDERAL

EVERY truck that is pictured here is a typical Federal—typical for its long, care-free service and typical of the prestige that it signifies that makes so much for user's satisfaction and dealer's success. And now comes the tenth year Federal!

Behind that phrase are ten long years of service to the truck-buying public. Expressed in that phrase are all the efforts of our engineering department, our sales department, our advertising department—all the efforts of our distributors and dealers—all the good performance of every one of the \$50,000,000 worth of Federal Motor Trucks distributed throughout the world—every day of every year for ten years.

The Tenth Year Federal! It signifies success, the success of seven hundred Federal dealers and distributors, the success of thousands of Federal owners—all founded to greater or to less extent upon the success of the Federal truck.

But that phrase "The Tenth Year Federal" signifies something more than mere material success—it signifies firm adherence to manufacturing ideals and ideals of fair dealing with the public, and with Federal dealers. The good will which the general public holds for Federals is found intensified in the loyal attitude of Federal dealers toward Federal.

The Federal Motor Truck Company is proud of that attitude—proud that it can deserve such loyalty as it finds among its dealers and distributors. That loyalty is one of the big reasons why there are so many Federals throughout the world today.

Federal Motor Truck Company
Detroit, Michigan



1 1/2 Ton operated by National Biscuit Co., Albany, N. Y.



2 Ton operated by Rowe Bed Hammock Co., A. W. Eaton, Gloucester, Mass.



5 Ton operated by the National Lead Co., New York

FEDERAL

One to Five Ton Capacities

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

LINCOLN HIGHWAY TO LOS ANGELES.

There is a project on foot to extend the famous Lincoln highway from Ely, Nev., so as to give it a terminus at Los Angeles, Cal., this involving the construction of 770 miles of roadway. The location of the big branch plant of the Good year Tire & Rubber Co. at Los Angeles has greatly stimulated interest in this project. Ely is the first big town reached by the Lincoln highway after crossing the desert section of the Great Salt Lake country. It is suggested that the new spur run to Oasis by way of Tonopah and Goldfield, then through the Owens River and Antelope valleys to Los Angeles. This would mean that 270 miles of the highway would cross Nevada and 500 miles would be in California. The Automobile Club of Southern California has already placed sign posts along the proposed route, and the project is said to have the approval of the Lincoln Highway association. It is expected that both the states of Nevada and California will construct their respective portions.

E. E. SEIG IS PROMOTED.

E. E. Seig, head of the credit department of the Republic Motor Truck Co., Alma, Mich., has been promoted to the post of assistant general sales manager. Mr. Seig has been connected with the Republic company in various capacities since its organization.

W. R. Tomlin, who has been Mr. Seig's assistant in the credit department, succeeds him as its head.

BOHAN JOINS TORBENSEN AXLE CO.

Lloyd J. Bohan, who for more than three years has been connected with the Gurney Ball Bearing Co. at its Chicago office, has resigned to associate himself with the Torbensen Axle Co. as sales representative. He will have headquarters at Chicago and will cover western territory from that city.

LOADING TRUCKS ON CARS QUICKLY AT GMC PLANT.

Loading trucks on railroad cars for shipment is work that requires care and judgment. It must be quickly done and the machines must be protected against damage in transit, for they are subjected to a good deal of buffeting while on the cars. The shipments are made when possible in special cars with end doors, and the machines are driven up skids by their own power into the cars. But the car shortage is such that no railroad offer is refused. When coal cars and gondolas are only available then loading must be done far differently.

At the plant of the General Motors Truck Co., at Pontiac Mich., the trucks are loaded on these type cars with a traveling crane, which can be positioned anywhere on the trucks and will lift a truck precisely where it is to be anchored. The work is well done and there is a great saving of time and no probability of damage from handling.

KIMBALL JOINS PIERCE GOVERNOR.

A. L. Kimball, formerly chief engineer of the Fulton Motor Truck Co., is now sales manager for the Pierce Governor Co., Anderson, Ind., in charge of the territory east of Indiana. Mr. Kimball is a man of wide experience in the automotive industry, having been previously employed as experimental engineer for the Hudson Motor Car Co., Chalmers Motor Car Co. and Dodge Brothers. He is a graduate of the University of Michigan and a member of the Society of Automotive Engineers.

HARMER GOES TO SERVICE.

Harry Harmer, for the past seven years connected with the White Co., in charge of its National Users business, has joined the Service Motor Truck Co., Wabash, Ind., as Chicago branch manager. Mr. Harmer's standing in the automobile industry in Chicago and vicinity is of the highest.

NEW STANDARD 2½-TON MODEL 70 TRUCK.

The Standard Motor Truck Co., Detroit, builder of Standard trucks, has now in production a new unit that has been designated Model 70, which is rated at 2½ tons load capacity. This machine is constructed of the standardized units used by this company for 10 years and is built to the well known Standard design, but will have the new Timken axle. Solid tires are listed as regular equipment, but pneumatic tires will be furnished to specification, the forward wheels having 36 by four inches shoes and the rear wheels 36 by seven-inch.

WILL BUILD ADDITION TO FEDERAL BEARING PLANT.

Work has been begun on a large addition to the plant of the Federal Bearings Co., Poughkeepsie, N. Y., which will be completed by the end of winter, and which is expected to increase the production more than 100 per cent. The company is to double its resources by increasing its capital from \$1,000,000 to \$2,000,000. The business of the company has developed very rapidly and continuance of this growth is believed will justify the expansion.

NAPOLEON MOTORS FACTORY MANAGER.

H. C. Carter has been appointed factory manager of the Napoleon Motors Co., Traverse City, Mich. He was for a number of years with the Dort Motor Car Co., Flint, Mich., leaving that concern to organize the inspection department of the Republic Motor Truck Co., Alma, Mich., and eventually became chief inspector. He is a man of broad experience in all branches of the automotive industry.

GOODYEAR INCREASING IN CANADA.

The Goodyear Tire & Rubber Co., Ltd., of Canada, is to increase its capital from \$3,000,000 to \$30,000,000, the present preferred stock to be retired. Earnings have grown from \$91,070 to \$13,976,349 yearly.

S. A. E. ANNUAL TRACTOR DINNER.

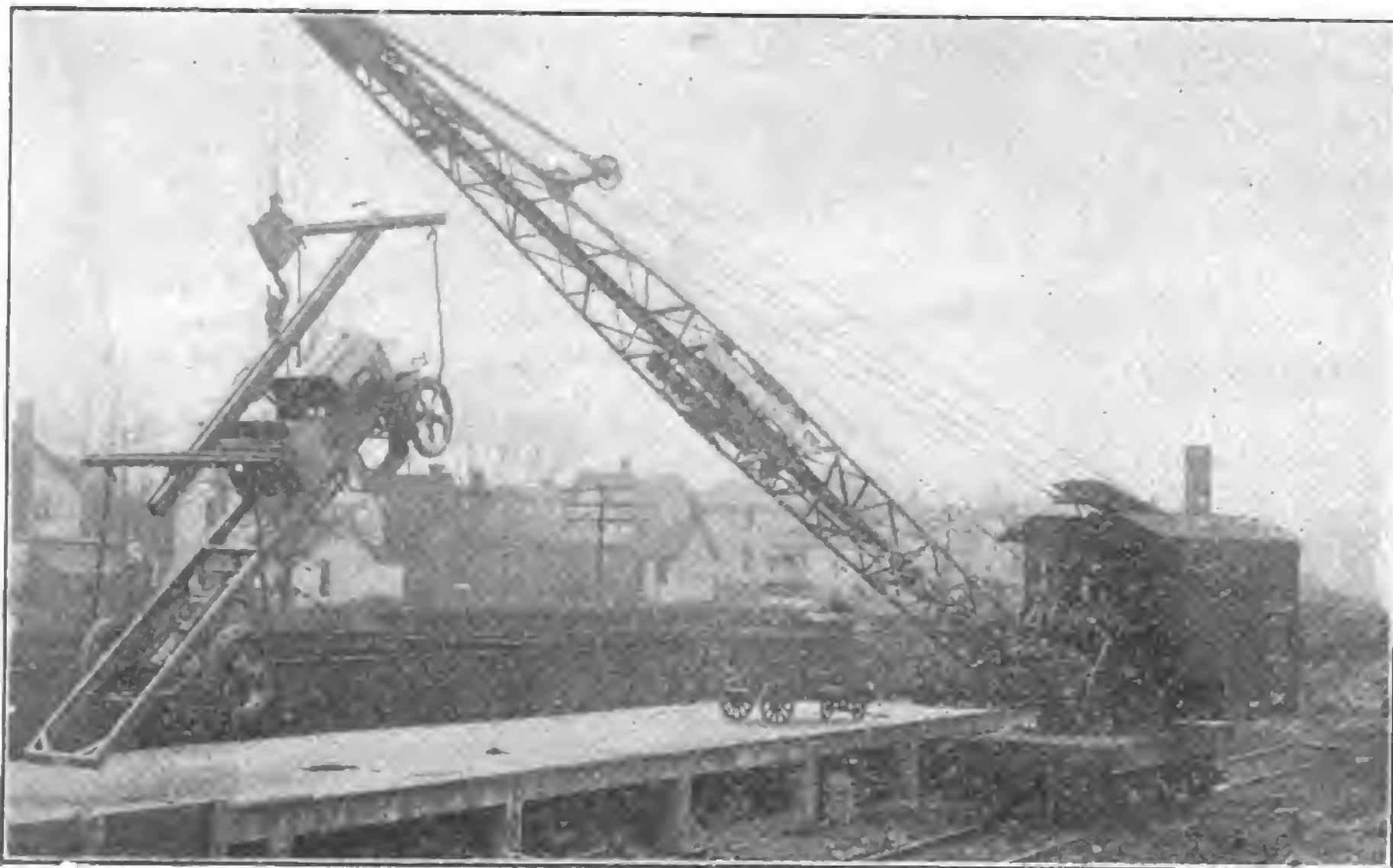
The annual dinner of the Society of Automotive Engineers during the Kansas City Tractor Show will take place this year at the Hotel Baltimore in that city the evening of Feb. 19.

MOSELEY BECOMES MANAGER.

The United States Motors Service, Inc., of Philadelphia, has appointed W. H. Moseley, Jr., as manager of that branch.

HEARTZ RESIGNS FROM MORELAND.

Roy D. Hertz, general sales manager of the Moreland Motor Truck Co., Los Angeles, Cal., has resigned.



Loading Trucks on Coal Cars with a Railroad Steam Crane at the Plant of the General Motors Truck Co. at Pontiac, Mich.

PRODUCTION OF THE TRUCK INDUSTRY

INNUMERABLE statements have been made as to the number of trucks in use in the United States. Because of the fact that licensing is frequently in duplicate to meet the requirements of state laws, because trucks are not segregated from passenger cars in the registration in many states, because converted passenger cars are rated as trucks, what may be regarded as an accurate record is not obtainable.

The best basis for judgment is the record of production, and so far as known the most dependable was presented to Congress while revenue legislation was pending. When one realizes that the only accurate figures are those obtained by the United States census, which is taken once in 10 years, and there is no reason for manufacturers making report to any body unless affiliated with the National Automobile Chamber of Commerce, which promises a production statement, the difficulty of obtaining definite fact is obvious.

[The following record of production of the industry was compiled from reports made by manufacturers to the National Automobile Chamber of Commerce, from United States census reports and sworn statements made to the War Industries Board of National Council of Defense. It is certainly a fair record of production; but does not fully state shrinkage.

Year	No. Vehicles	Wholesale Value
1903 to 1910	10,374	\$20,485,500
1911	10,655	22,292,321
1912	22,000	43,000,000
1913	23,500	44,000,000
1914	25,375	45,098,464
1915	74,000	125,800,000
1916	90,000	157,500,000
1917	128,157	220,982,668
1918	227,250	434,168,992

The estimate of manufacturers for 1919 production, as compiled by the Automotive Products Section, War Industries Board, in January of the present year, showed a total of 327,930. of which 36,227 was due on United States government contracts, or a total of 291,703 to be produced for commercial sale, and which included an output of 100,000 by the Ford Motor Co.

The totals stated for production include the vehicles exported and built for the United States government for army service. To better understand the classification the following summary is presented:

Year	Production	Exported	Government Order	Domestic Sale or Surplus
1913	23,500	993	....	22,507
1914	25,375	784	....	24,591
1915	74,000	13,996	....	60,004
1916	90,000	21,268	....	68,732
1917	128,157	15,977	....	112,180
1918	227,250	12,200	a90,727	215,050
	566,782	65,218		b411,837

One will note that the total production of trucks prior to 1913 was 43,029, and adding to this the production to and including 1918 the total available for domestic sale was 454,866.. The shrinkage from this total may be regarded as equal to the output of the industry up to 1914, or 66,529. Deducting the estimated shrinkage from the total shows a total of 388,337, and adding to this the estimated production of 225,000 (including the 36,227 due to the government on contracts completed during the present year), the estimate of 575,110 trucks in use (not including converted passenger car chassis), is obtained. This is probably as accurate as any approximation that can be obtained. A reasonable guess is that about 200,000 passenger cars have been adapted for freight carrying.

The production by the industry for the coming year is problematical. Estimates range from 250,000 to 350,000. Much will depend upon the condition of business, but there is no question that with the great interest in road construction, the uncertainty of railroad transportation and the probability of large increase of local freight rates there will be far greater use of trucks of all descriptions.

a Delivered between April 1, 1917 and Dec. 1, 1918.

b Government orders deducted from total, not yearly surplus.

J. I. CASE PLOW WORKS CO. ANNOUNCES WALLIS THRESHER.

The J. I. Case Plow Works Co., Racine, Wis., will shortly place in the market a new threshing machine, which will be built in the 24 by 40 size only, which will be known as the Wallis, the same trade name as the tractor manufactured by this concern.

The company will not build this machine at its works, but has made contract for its production to specifications by the Sawyer-Massey Co., Hamilton, Ont., a concern that has been established more than 80 years and is one of the best known of the Canadian industries. The threshers are designed for use with Wallis tractors. The machine will round out the Wallis and Case series of power implements and make the concern an even greater factor in the industry and trade. Statement is made that the Wallis thresher design was determined after two years careful experiment and service observation.

ANDERSON IS CASE KANSAS CITY MANAGER.

C. H. Anderson, for six years connected with the Kansas City branch of the J. I. Case Plow Works Co., and for the past two years assistant manager, has been appointed manager to fill the vacancy caused by the appointment of G. C. Weyland as general sales manager. Mr. Anderson was formerly with Foof & LeFavor and the Parlin & Orendorf Co.

TRACTOR APPLIANCE CO. WILL MAKE SIPHON AIR WASHER.

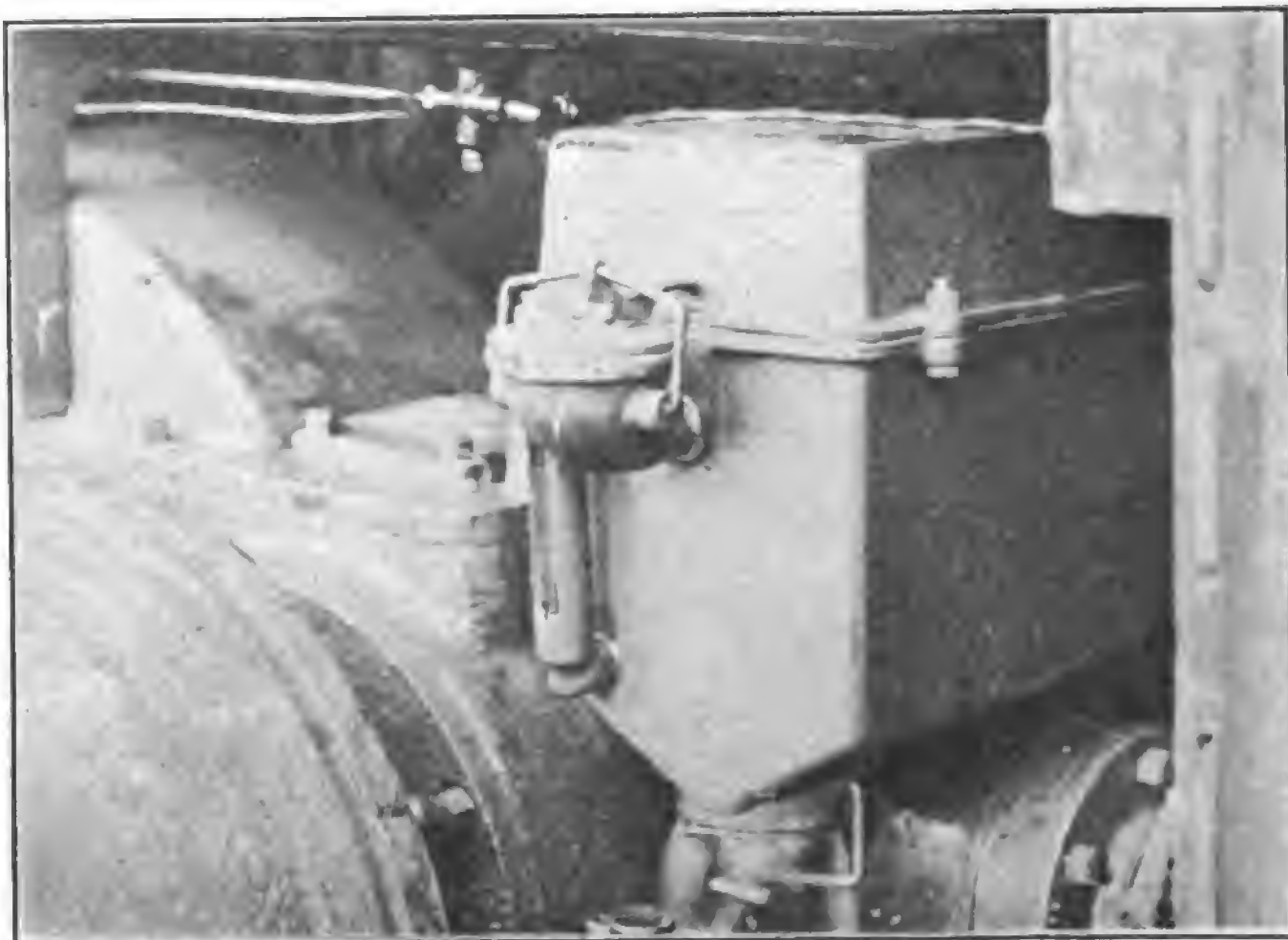
The Tractor Appliance Co. has been organized at New Holstein, Wis., which is shortly to be incorporated, to manufacture the Siphon air washer, a new type of wet air cleaner that has been adopted as standard equipment for all Lauson tractors.

Application has been made for patent for this device, which differs from any other design of air cleaner in that the air is drawn through a tube in a reservoir into which water is injected by gravity, and the air and the spray connect with a baffle plate, which causes the water and dust to separate from the air; the air passes under the baffle plate, where it is washed by the drainage from the plate, and passes upward into a chamber, whence it is drawn into the carburetor, fully humidified and thoroughly cleaned.

The air washer is claimed to have exclusive qualities and to be unusually efficient, considerably increasing the power

production of the engine and preventing the accumulation of dust in the lubricant. The lubrication of the engine cylinders is largely improved and wear is minimized.

The accompanying illustration is of the washer installed on a tractor. As will be noted, the device is comparatively small and can be located conveniently wherever desired, accessibility for filling and draining being the main essential. The filler and drainage caps are large and are closed with clamps, no tools being required for utilizing the machine; being only when removing it.



A Siphon Air Cleaner Installed on a Tractor Engine, Showing the Clamped Filler Cap and the Top of the Drainage Cap at Base of the Illustration.



The New Plant of the Timken Roller Bearing Co. at Columbus, O., Now Nearing Completion. At Left, the Front of the Main Building, 500 by 300 Feet; at Right, the End of the Structure for the Heat Treating Department at the Rear.

Make Bearings While Workers Erect New Timken Plant

MORE than \$2,000,000 will be expended to erect and equip the new plant of the Timken Roller Bearing Co. at Columbus, O., which is now in construction, and at which production has already begun. The expansion was due to the demand for bearings that could not be met by the works at Canton, O., and when the necessity for the increase was realized careful appraisal of different possible locations was made.

Columbus was approved from its location with reference to distribution to the automotive industry as a whole, because of the transportation facilities, the proximity of several fuels utilized for manufacture, freedom from industrial unrest, as good housing and living conditions as were obtainable, and an abundance of skilled labor. No proposition of tax exemption or similar inducement was entertained.

The site purchased in Columbus is slightly more than nine acres, within 10 minutes car ride of the business center and close to substantial residential districts. Both Cleveland and Fifth avenues, on which it is located, are paved, the former having a main trolley line.

When Columbus was determined and the site acquired several shops were leased and work on tools, special dies and machines for equipping the plant was begun. This work was under the direction of men selected from the works at Canton, and this force was the nucleus of a complement of from 2000 to

2500 men who will man the plant when it is operating to capacity.

To carry on this work the shops of the Superior Die, Tool & Machine Co., in Buttles avenue, was leased, and as the operations increased an adjacent building of the Structural Steel Co. was acquired and the tool department was enlarged.

The erection of the main building, approximately 500 by 300 feet, was begun, and at nearly the same time actual production of bearings was commenced with the installation of about 36 roll automatic and screw machines in the leased buildings. Hardly had the D. W. McGrath Co., Columbus contractor, finished the roof of the main structure before Timken millwrights began setting up the screw machines. Two days later production was started on cups and cones.

The principal unit is constructed of structural steel and is a saw-tooth type with seven bays, each about 43 feet wide, and when completed it is maintained that it will be one of the largest, best ventilated, best lighted and best coordinated plants of the country. The main building will be without partitions. The cold weather, however, necessitated that if machine work on a precision was to be well done that part of the shop where production was being carried on should be enclosed. For that reason, as the roof, sides and floors are finished the temporary partitions are moved so that the space given over to production can be increased. As rapidly as the construction is completed in one section workmen erect machinery and install equipment and with the least practical delay the production increases. By the time the plant is completed the greater part of the machines and tools will be erected and operating.

In addition to the main building there is a structure 340 by 60 feet in which will be the heat treating department, which will be equipped with every facility and will be adequate for a very large volume of production.

Several years ago the Timken company erected at Canton, O., the mills necessary to produce raw material, and now extensive expansion of its steel and tube mills are nearing completion, so that the company will be able to furnish the Columbus plant whatever raw stock is necessary for capacity operation.

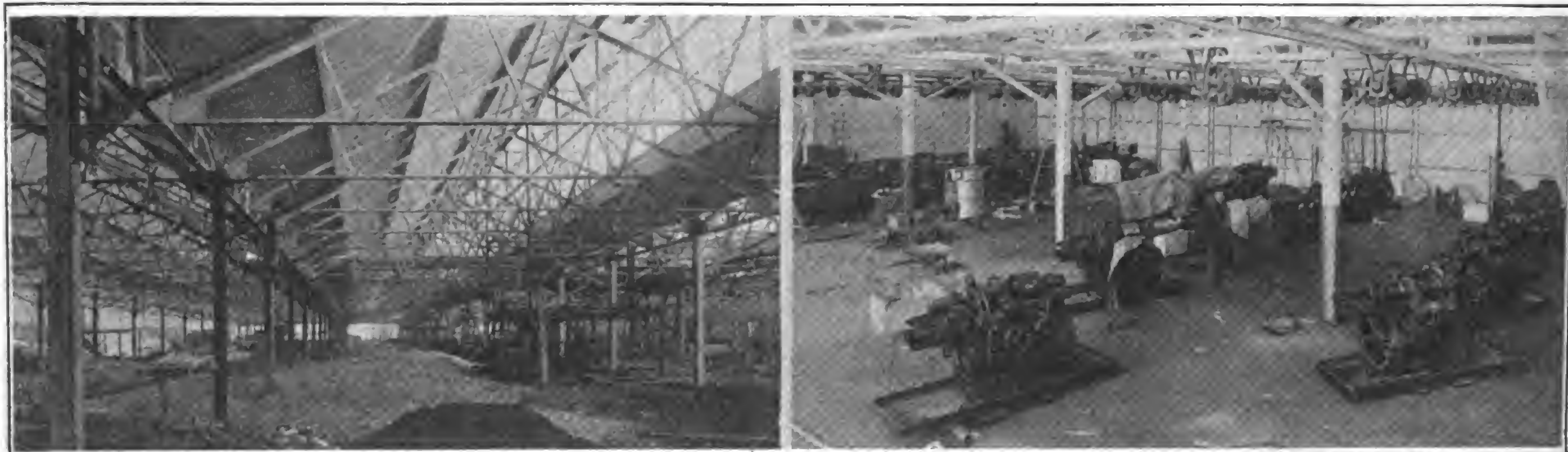
RAINIER DISTRIBUTOR FOR 22 TEXAS COUNTIES.

The Nash & Hurley Motor Co., distributor in 22 counties of the Rainier truck, made by the Rainier Motor Corporation, Flushing, N. Y., is to open an office and warehouse at Fort Worth, Tex., where the three-quarters, one, 1½ and two-ton models, as well as a complete line of truck supplies, will be handled.

The president of the Nash & Hurley company is George B. Nash of Fort Worth, and the secretary-treasurer is George A. Hurley, formerly of Cleveland, O.

CHAPMAN IS PACKARD ADVERTISING EXPERT.

The Packard Motor Co., Detroit, has appointed William Carl Chapman, who was its expert advertising manager, and stationed him at the main office at Detroit. Mr. Chapman attracted attention by his cleverness in varying forms of publicity while he was assistant advertising manager for the Packard Motor Car Co. of New York.



Looking Down One of the Seven Bays of the Main Building of the New Timken Roller Bearing Co.'s Plant. At Left, Erecting Machinery for Production While the Building Is Being Constructed.

RAYFIELD MODEL O CARBURETOR

DESIGNED especially for the equipment of engines built for power trucks, the Rayfield model O carburetor, a new product of the Beneke & Kropf Manufacturing Co., Chicago, is claimed to have unusual efficiency. Statement is made by the company that this instrument represents the best development in carburetion and is the result of long experience with the service of cars and trucks.

The Rayfield carburetor is widely known as passenger car equipment, but the model O is entirely new. It is so designed that there are two levels of gasoline, and there are two nozzles. It is specified as a type having concentric float construction with a venturi tube and air bled jet.

The float mechanism is a fulcrum lever construction and is designed to have a positive method of controlling the flow of gasoline from the main supply line into the carburetor. The float chamber is directly below the mixing chamber, so that any gasoline accumulated by condensation may be returned from the manifold, flowing directly into the float chamber, this obviating all leakage and flooding.

As stated, there are two gasoline levels, the fuel first entering a reservoir and then after rising to the top of a standpipe it flows into the float chamber, where it is controlled by the height of the float, the needle valve being opened and closed by the rise and fall of the float.

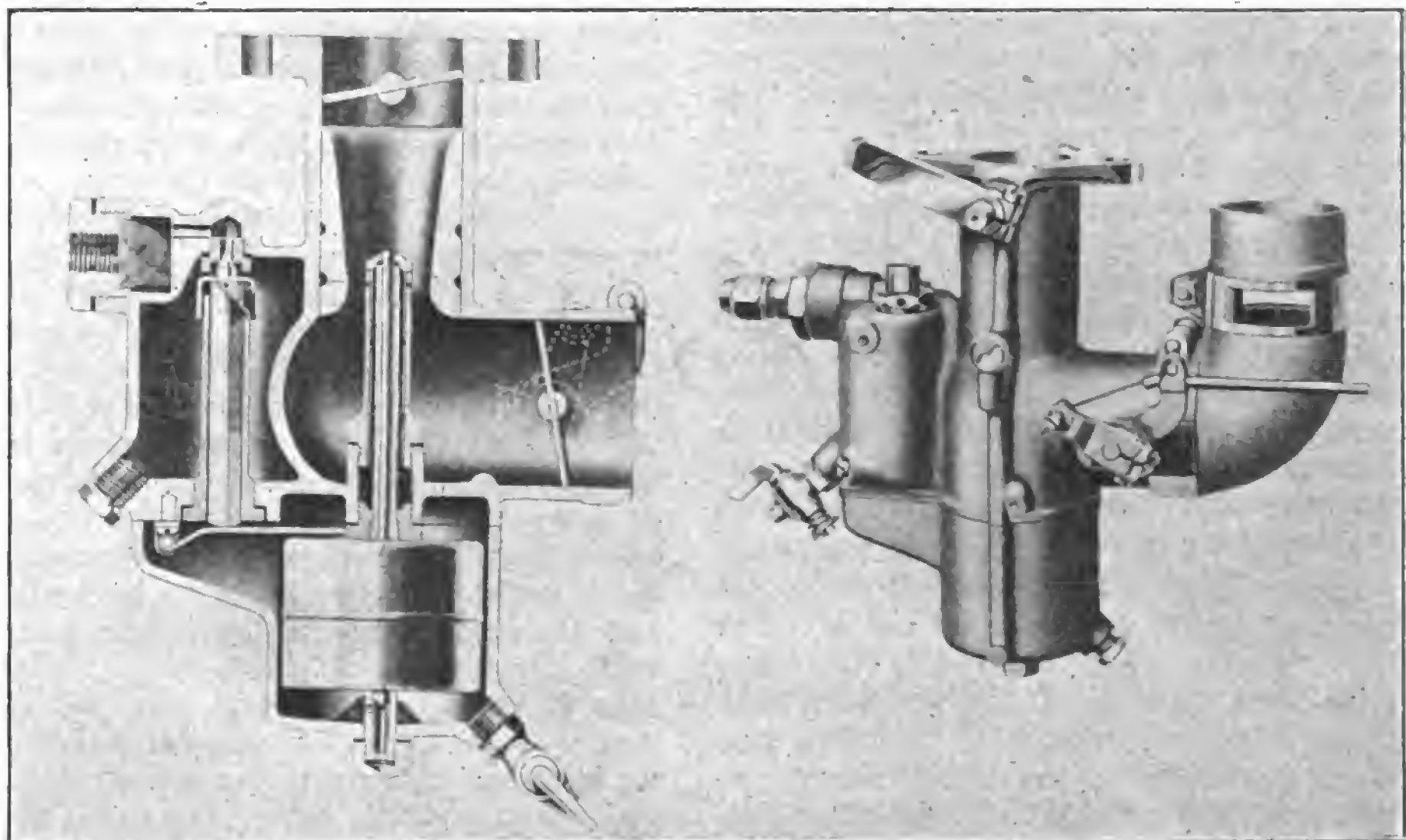
There are two nozzles, the one for intermediate speed, which is supplied from the reservoir, while the other is supplied from the float chamber, this becoming operative at intermediate and high speeds. Acceleration is by means of an accelerating well, located in the reservoir, and when this well is drained air is bled through it into the fuel. Both the

jets are constructed for the use of air bleeders, that is, air is bled in with the gasoline before it reaches the nozzle outlets.

Experience has proven that by the use of the two gasoline levels and two distinct and separate nozzles, it is possible to obtain a very thin intermediate mixture and at the same time to obtain suf-

it serves as a valve and releases this gas at intermediate or high speed, or when the throttle is at more than one-quarter opening.

An air valve choker is used for starting, that is, all air is cut off and a high velocity obtained at the nozzle. Both nozzles will supply ample fuel for this purpose. After the engine has been start-



New Model O Rayfield Carburetor: At Left, Sectional View to Show Construction; at Right, the Complete Instrument.

ficient fuel for high speed and heavy work whenever there is need. This construction is claimed to greatly economize fuel and to insure sufficient power for all work.

There are two adjustments, the one being a low speed or idling adjustment, and the other is an intermediate or high speed adjustment. The idling gas passes through the throttle shaft when the nozzle is closed. When the throttle is opened

ed the choke, of course, can be set about one-third closed. At this setting the engine will be quickly responsive, for the increased velocity resulting from the choking of the air valve will cause a heavy draft on the high speed nozzle, providing the fuel necessary for the short period the engine is heating. Because of the construction hissing and other objectionable conditions during the period the engine is heating are obviated.

PIERCE-ARROW EARNINGS SHOW SHRINKAGE.

The earnings of the Pierce-Arrow Motor Car Co. for the three months ending Sept. 30 were said to be \$476,000, as compared with \$626,000 for the quarter ending June 30 and \$568,000 for the quarter ending March 31. The earnings for the third quarter of the year are slightly more than half those for the same period in 1918, and less than one-third of the earnings for the same three months in 1917, although war taxes were not deducted from the 1917 accumulation. The company had very heavy war contracts.

FOUNDRY INCREASES CAPITAL.

The Northwestern Steel & Iron Corporation, Minneapolis, Minn., formerly the Gas Traction Foundry Co., of which D. A. Potter is president and C. L. Retzel secretary, has increased its capital from \$100,000 to \$200,000. The additional resources will be used for expansion of the works.

Big Northwest Show of Tractors and Implements

At the Overland building at Minneapolis, Jan. 31-Feb. 7, will take place the Twin City Automobile, Truck, Tractor and Industrial Exposition, and the department devoted to tractors and farm power implements and utilities will be the largest ever seen in the northwest. There is 350,000 square feet of exhibition area in the mammoth structure, and of this approximately 50,000 square feet of the basement and ground floor has been allotted for tractors exclusively.

There is reason to believe, however, that this space will be inadequate and that a considerable number of applications will be denied. More than half the floor area available has been sought by the tractor manufacturers of Minneapolis and St. Paul alone. In 1918 the tractor division had 10,000 square feet of the floor, and last year with 24,000 square feet many could not obtain space.

The arrangements for the tractor department are made by the Northwest Tractor Trade Association, which is now endeavoring to arrange for the late applicant, but the results are problematical.

The tractor show will include not only tractors, but power farming equipment of all kinds, such as plows, cultivators, harrows, drills, harvesters, binders, planters, ensilage cutters and silo fillers, threshers, and, in fact, practically every machine for field work, as well as machinery for other farm operations that can be driven by tractors serving as power plants.

And in connection with this will be trucks of all kinds adaptable for farm service, as well as all manner of accessories for tractors, trucks, stationary engines, farm lighting apparatus and the like.

The show and the dates have been sanctioned by the show committee of the National Implement & Vehicle Association. The tractor show will be the only exhibition of the kind held east of the Mississippi river, and it will undoubtedly be largely attended by farmers.

PNEUMATIC TIRE EQUIPPED TRUCKS

By C. A. Wales, Sales Manager, Locomobile Co. of America.

IN DEALING with the subject of pneumatic tires on trucks, it is the intent to refer only to trucks of two tons or over or trucks that are used for cargo purposes entirely, not for passenger work and not for pick up and light delivery work.

No available figures show the number of trucks for the year 1918 which have been equipped with pneumatic tires. It is fair to say, however, that 1918 was the first year that pneumatic tires of seven inches or over were successfully used to any appreciable extent. In 1919 a very considerable number of pneumatic tires were used on two-ton trucks, both commercially and in war work. 1919 saw comparatively few trucks equipped with nine-inch or 10-inch tires, in fact it is doubtful even today that there are over 300 three-ton trucks on pneumatic tires.

In view of the fact that we today are selling trucks at the rate of 2000 per year, of which 25 per cent are of three tons or over, the possibility of using pneumatic tires on this 25 per cent. is of great interest to the truck industry and most especially to the sales end of the industry, for today the large truck has become a direct competitor of the railroad. It is being recognized by the state railroad commissions as transport competition and an attempt has been made in Washington to obtain such recognition from the Interstate Commerce Commission. Every railroad in the country reports that the short haul, less than cargo lots, in all localities where roads permit, is being taken care of by trucks and that without this relief the trucks affords the railroads, terminal facilities in every large city would be inadequate to the point of causing a complete break down of the transportation distributing system of the entire United States. It can, therefore, be well claimed that the field and market for the larger size truck really begins in the year 1920 and the possibility of the sale of these trucks depends upon their ability to perform.

Pneumatic Tires Increase Utility.

There seems to be no doubt that a reliable, economical, practical pneumatic truck tire will greatly increase this ability, will decrease costs and thereby increase truck sales.

Mr. Litchfield of the Goodyear company has advanced an interesting formula as to the future possibilities of truck sales. He says that the potential number of trucks to be used in this country is to the present number of railroad freight cars just as the present number of automobiles is to the present number of passenger coaches.

The potential market for automobiles undoubtedly is governed by these two factors. First, the total number of passengers to be hauled in the country, and the cost of hauling them. We know the enormous extent to which automobiles are already in use for hauling passengers throughout the country and that this ex-

tent is due largely to the reductions that have been effected in the original cost of automobiles and in their upkeep costs.

Price Reduction a Large Factor.

Obviously, there is a great deal more tonnage of products in the country than of people. If the cost of buying and operating trucks can be cut down as in the case of the automobile, then the total number of trucks to be sold will be proportionately greater than the number of automobiles; which naturally leads to a comparison of the present development in the building of efficient automobiles and of efficient trucks. Essentially, the automobile and the truck are the same in their characteristics. They depend on the same means of propulsion, the internal combustion engine; they possess the same general advantages and disadvantages and their differences in design are due to two things—first, the difference in the character of the loads to be hauled and the difference in their tire equipment.

Look back 12 years and you will see that the transportation of passengers by automobiles had not been developed to any considerable extent. Automobiles were too costly to buy and too expensive to maintain and operate. Few people could afford to pay the most of this kind of transportation. The developments leading to a marked reduction in this cost have been due very largely to the success with which tire equipment has been made more efficient. Just as soon as tires were built to give better cushioning, greater reliability and longer period of service, automobiles were improved to take advantage of these features. They were consistently built lighter and lighter and became less expensive, both to build and to operate.

Tire Improvement Will Lessen Upkeep.

Similar developments may logically be looked for in trucks and in proportion as tires are built more efficient and to give the greater cushioning power and reliability, so that they will compare favorably with the service of tires on passenger cars, it seems logical to expect that trucks will be built lighter and lighter and with a corresponding decrease in the cost of construction and of operation, until the cost of hauling products by trucks is as cheap comparatively as the cost of hauling passengers by automobile.

Theoretically, this is the development we would expect to look for in the truck industry in the future.

We find that trucks now being built and designed originally for solid tires actually do more work on pneumatic tires. We find that these trucks use less fuel and oil. We find that these trucks, because of the greater efficiency of the cushioning given by pneumatic tires depreciate less rapidly and cost less to keep in repair. We find that these trucks on pneumatics are able to operate under more conditions and are more generally

useful in hauling any type of product over any type of territory.

How Tire Equipment Will Offset Sales.

The evidence of this is readily available anywhere in the country and was nowhere more fully demonstrated than on the recent 3000-mile tour under the auspices of the Truck Sales Managers' association. The men who made that trip through the northwest territory probably saw a great many concrete demonstrations of just what the effect of pneumatic tire equipment is going to be on the future sale of trucks.

Use your imagination for just a moment. In Great Britain and Europe nearly all the freight is hauled in freight cars that carry no more than American trucks, five or six tons, and the peculiar thing is that the freight rates are not much greater than here. We have all heard the boys who came back from over there express surprise at the marvelous manner in which those dinky little freight cars transported such enormous quantities of materials of war. Item No. 1 is therefore the fact that the five-ton unit can handle the freight of a nation. Item No. 2 is that in America trucks are doing the work of the railroad short haul. Item No. 3 is that railroad rates are increasing and trucks rates decreasing. The last item to be mentioned is roads. They are being built not good enough nor fast enough, but still being built.

Let us follow the possibilities for just a moment. Truck highways from freight center to freight center graded with a maximum of two per cent. unbroken cargoes delivered from factory to consumer without handling charges; raw materials from the farm or mine direct to railroad or steamships; a return load and a recognized tariff. This all means that our sales will increase in proportion to the building of roads and the decreased cost of operating trucks (personally I calculated the sales increase to be 20 per cent. per annum for at least five years). The cost race between the railroads and trucks is so close that it needs but little to make it even. The pneumatic tire will do more to reduce the advantage the railroad now has than any other factor, for it increases speed and operating radius, permits trucks to travel over rougher roads and protects the mechanism of the truck. Perfected, the pneumatic large tire is the key to truck industry.

Depend Upon Tire Manufacturers.

Don't think for a moment I love the tire men. I don't—I'd rather see some way of being independent of them, of using a nice spring wheel that we could make in the factory and never have a blow out, but the experimental department states that it will be several moons before said wheel is perfected and so we have look to the tire people to increase the possibilities of our truck; so while we are at it let's try to be nice to them, the same as we are to the cook, the tax collector and some of our relatives.

Some of the tire men have oversold their tire ideas to our customers and to us; we should come back at them and better show them what our needs in tires are; we should also better educate our customers and our salesmen.

A little kindly criticism on the subject of selling will not be out of place here. I don't care what I say here because this is the one place I know of where I can't sell a truck or spoil a prospect.

Did anyone here ever take the other side of the question and find out what impressions our salesmen have upon the truck buyer? I called upon several large

purchasing agents last month, all of whom buy not only trucks, but great quantities of other manufactured materials, and without exception everyone of them stated that the truck salesman knew less about his product than any other class of salesman who called upon them; that they talked glistening generalities and did not seem to be well informed about either their product or the needs of the prospect. They compared the ability of steel salesmen, electric motor salesmen and the general run of salesmen who represent reputable concerns very much to our disadvantage. The reason I mention this subject is that

developments such as the introduction of the large size pneumatic tires tend to add more factors to sales possibilities and require a greater knowledge and ability on the part of the salesman, and, therefore, it is part of our work to keep the standards of all truck salesmen up to the standards that bigger markets and competition produce.

Every year truck selling is going to require the services of a better class of man and the manufacturers, distributors or dealers who do not recognize the need of knowledge and sound business ability on the part of the truck salesman will fail.

KANSAS CITY TRACTOR SHOW DATE FIXED.

The management of the Kansas City Tractor Club, which is organizing the fifth annual tractor show, has announced the date of the exhibition as Feb. 16 to 21 inclusive, instead of Feb. 9 to 14 inclusive, as originally.

The date was changed to allow time for the transportation of the exhibit that will be made at the big Minneapolis automotive show, Jan. 31-Feb. 7, inclusive, which will include tractors, implements, trucks and cars. Statement is made that the space available for exhibits at the Kansas City show will be double what they were last year. The exhibition will be practically international and will no doubt draw visitors from all parts of this country, Mexico and the Latin-American countries and from Europe.

OSHKOSH TRUCK BRANCH PLANT AT JACKSONVILLE.

The Oshkosh Motor Truck Manufacturing Co. has established a factory branch at Jacksonville, Fla., in charge of Wake-man Hackett, to facilitate the delivery of trucks and replacement parts in the southeastern states. The sale of these trucks has been brisk since the Florida Citrus Association adopted them as standard equipment. Statement is made that the company will establish a factory branch at Minneapolis as soon as a desirable property is located.

The company has made agency contracts with the Warden Motor Sales Co., Memphis, Tenn., and the Lewis & Greene Motor Co., Fort Worth, Tex.

CHANGE IN GREENFIELD HOLDINGS.

Frank O. Wells, president of the Greenfield Tap & Die Corporation, Greenfield, Mass., has sold his entire holdings in that concern to Frederick H. Payne, the vice president. Mr. Wells, who is one of the prominent figures in the screw thread industry of the United States, retires as president and member of the board of directors, but will remain with the corporation in an advisory capacity. He is succeeded by Mr. Payne as president. F. G. Echols, vice president and general manager, has been chosen a director to fill the vacancy caused by Mr. Wells' resignation.

Crops Nearly Triple Pre-War Average Value in 1919

Washington, Dec. 12.—The value of crops produced in the United States this year is nearly three times greater than the average annual value during the five years preceding the European war, is the summary of the report of the secretary of agriculture for 1919.

"On the basis of prices that have recently prevailed," states the report, "the total value of all crops produced in 1919 is \$15,873,000,000, compared with \$14,222,000,000 for 1918, with \$13,479,000,000 for 1917, \$9,054,000,000 for 1916 and \$6,112,000,000 for 1914, and \$5,829,000,000 for the five-year average from 1910-1914.

"These values represent gross production and not the net returns to the producer. The value of live stock on farms in 1919 was \$8,830,000,000, compared with \$8,284,000,000 in 1918; \$6,736,000,000 in 1917; \$6,021,000,000 in 1916; \$5,890,000,000 in 1914 and \$5,318,000,000 for the five-year average, 1910-1914.

"This increased financial showing, it is again necessary to emphasize, does not mean that the nation is better off to that extent or that its real wealth has advanced in that proportion. Considering merely the domestic relations, the true

state is indicated rather in terms of real commodities, comparative statements of which are given above.

"The increased values, however, do reveal that the monetary returns to the farmers have increased proportionately with those of other groups of producers in the nation, and that their purchasing power has kept pace in the rising scale of prices."

NEW GRAMM BERNSTEIN TRUCK PRICES.

The Gramm-Bernstein Motor Truck Co., Lima, O., has made announcement of the following changes in prices:

Model	Capacity Tons	Drive	Price
*15	1½	Internal Gear	\$1995
65	1½	Worm	2500
20	2	Worm	2900
25	2½	Worm	3650
35	3½	Worm	4450
55	5	Worm	5500

*Chassis with seat only. Others completely equipped.

VIRGINIA TAKES 200 NAPOLEON TRUCKS.

The Hunt Motor Co. of Chatham, Va., has just placed an order with the Napoleon Motors Co., Traverse City, Mich., for 200 trucks for distribution throughout Virginia.



Plowing with a Wallis Tractor Hauling a J. I. Case Gang of Three 14-Inch Bottom Plows, an Outfit That Is Now Marketed in Combination.

Annual Convention of N. I. & V. A. to Be at Atlantic City

The next annual convention of the National Implement & Vehicle Association will take place at Atlantic City, N. J., Oct. 13, 14 and 15, this location being determined at the last meeting of the executive committee of the association, this being the first to follow the annual convention.

The action of the committee was probably influenced by the sentiment expressed by the members attending the convention, the proposal to meet in the popular New Jersey seaside resort being very generally favored.

The annual conventions have usually taken place at Chicago, this choice being made with the view of conveniencing the members on the assumption that this city was central when railroad travel was considered and easily accessible to the majority. Not only this, the office of the secretary and general manager are in Chicago and there all records and sources of information on any desired subject are available. To have equal access to them would mean the transportation of papers and data wherever the convention was held.

Considering that a considerable number of the members came from east of Chicago and that they have always acquiesced to the conventions being held in that city, the executive committee believed that the change to the east for one meeting would be a deserved compliment to them and resolution was passed.

The committee at this meeting the executive committee, following its custom, added the names of Judge Nathaniel French, of French & Hecht, Davenport, Ia., and George R. James of James & Graham Wagon Co., and William R. Moore Dry Goods Co., Memphis, Tenn., to the list of honorary members of the association, this making a total of 14 for that list.

WILL INCREASE OLDMAR TRACTOR PLANT.

The Oldmar Tractor Co., located at Oldmar, Fla., a town founded by R. E. Olds of Lansing, Mich., a pioneer of the automotive industry, 14 miles from Tampa, is to increase its plant to have double the present production capacity. A large order for machines recently received has impelled this expansion.

MACCAR TRUCK LOAD RATINGS.

The series of trucks built by the Maccar Truck Co., Scranton, Pa., number five, which are rated as 2000 pounds, 3000 pounds, 5000 pounds, 7000 pounds and 11,000 pounds. The company does not at present build a five-ton truck, but it has begun manufacture of a ton chassis, which is known as model 5.

Harry Phelps has been made purchasing agent for the Atterbury Motor Car Co., Buffalo, N. Y.

NEW MACCAR MODEL 5 TON TRUCK.

The series of trucks built by the Maccar Truck Co., Scranton, Pa., has been completed with the production of model 5, which is rated at one ton capacity. This machine is constructed to the standard design for all Maccar trucks, but the units and parts are smaller.

The truck has 135-inch wheelbase and weighs approximately 3600 pounds. The construction units include a Continental engine, with cylinder bore of 3¼ inches and stroke of five inches, rated at 22.5 horsepower by the S. A. E. formula, cooled by a centrifugal pump and fan and a Maccar radiator that is a vertical finned tube type; Eisemann high-tension magneto and Stromberg carburetor; Brown-Lipe multiple dry disc clutch; Brown-Lipe selective sliding gear transmission gearset; Spicer shaft and universal joints; Timken worm drive rear frame; Merrill springs; Ross steering axle, Timken I section front axle; Parish gear; Schwarz wooden artillery type wheels. The brakes are internal expanding, both sets operating within drums on the rear wheels, and the control is by a steering wheel at the left side, spark and throttle levers on the hand wheel, center gear shifting and emergency brake levers and foot accelerator. The wheels are shod with 34 by 4½-inch interchangeable pneumatic tires forward and 36 by five-inch interchangeable pneumatic tires rear.

One feature of construction is the special Maccar unit power plant, which can be removed and replaced with a new unit in 30 minutes. The equipment includes driver's seat, running boards, fenders, oil dash and tail lamps, Kellogg tire pump, extra rim, tire repair kit, horn, tool box, jack and set of tools and front bumper.

WILL SPEND HALF MILLION FOR MUNICIPAL APPARATUS.

Philadelphia, Dec. 27.—Contracts for power municipal apparatus that will cost approximately a half million dollars has been made by Director Wilson of the Department of Public Safety. It includes 15 patrols and two vans for transfer of prisoners for police department, and 15 pumping engines, six chemical engines and two ladder trucks for the fire department. The contract for the fire apparatus was made with the American-La-France Fire Engine Co.

When these contracts have been filled the entire police department will be motorized and the fire department will be 65 per cent. motorized. With an additional \$300,000 the animal equipment of the fire department can be entirely replaced. The new apparatus is not to replace horse drawn apparatus, but it will be so located that it will make response to the longest runs and the old equipment will be located in sections where it can be better utilized.

Austin Parker of New York City has been appointed director of publicity for the Packard Motor Car Co.

Delaware Good Roads Association Is Organized

The Good Roads Association of Delaware was formed at a banquet that concluded a three-day exhibition by the Delaware State Highway Department at Wilmington, and a convention of the engineers of the department. The exhibition, the convention and the banquet were held at the Hotel DuPont, the engineers being the guests of Gov. John G. Townsend.

The object of the organization is to promote the interest of the public in good roads and all residents of the state are eligible for membership. The officers elected are as follows: President, Charles M. Upham, chief engineer of the state highway department; vice president, Charles E. Grubb, New Castle; secretary, W. W. March; treasurer, Harry L. Maier, chief engineer of Wilmington; executive committee, C. E. Connor, W. P. Hawkins, Albert S. Hirzel, C. S. Cale and Dean Cullimore of the Delaware State College.

Josiah Marvel of Wilmington, a member of the state highway commission, stated to the convention that his department has made a traffic survey of 298 miles of highway and has authorized contracts for 75 miles of roads which will cost approximately \$3,500,000. The department will maintain its roads by a patrol system and a road police organization has been perfected for the purpose of regulating traffic.

STINSON TRACTOR CO. TO MOVE TO EAU CLAIRE.

Eau Claire, Wis., Dec. 11.—The Stinson Tractor Co., now operating a plant at Superior, Wis., will move its machinery to this city next spring and establish a works that will have largely increased facilities for production. The manufacturing plans cannot be determined until the removal is completed, but the output of the company will be at least several times what it is now.

The company now has capital of \$450,000, but this will be increased to \$1,000,000 so that it will have ample financial resources. Joseph J. Ott, who for a long time was vice president and general manager for the Kaiser Lumber Co., this city, has been elected treasurer and general manager for the Stinson Tractor Co.

FRANCE REBUILDING ROADS.

Four great mountain roads are to be rebuilt and resurfaced in the region of the upper Vosges, France, leading from that country into Alsace. These roads have existed heretofore principally as strategic military mountain roads, and the present effort is in line with making them available for motor traffic, with an especial appeal to tourists. Taken together, they will form a new approachable circuit of and entrance to upper Alsace.

NEW THERMAUMATIC MANIFOLD

A COMBINATION intake and exhaust manifold that is claimed can be used with all types of engines is built by the Auto Products Co., New York City, which is claimed to have unusual advantages. The construction is unusual, the main feature of the unit being an air draft control for the intake that automatically regulates the heat transferred to it regardless of speed or load of the engine. The manifold heats the air admitted to the carburetor and insures a satisfactory fuel mixture.

Claim is made that with the constant temperature of the intake manifold and the constant temperature of the air passed through the carburetor, there is a considerable saving in fuel, more power is obtained from a given volume of fuel and the operation of the engine is more satisfactory.

The manifold is illustrated in external and cutaway views. As shown in the latter there is a separate intake passage, a separate exhaust passage and two air passages which are open at the front end to receive the fan draft. These are designed differently for different engines, so that the operating conditions shall be effective. These air passages or ducts are supplied air in ratio to the speed of the engine by a fan driven by the crankshaft.

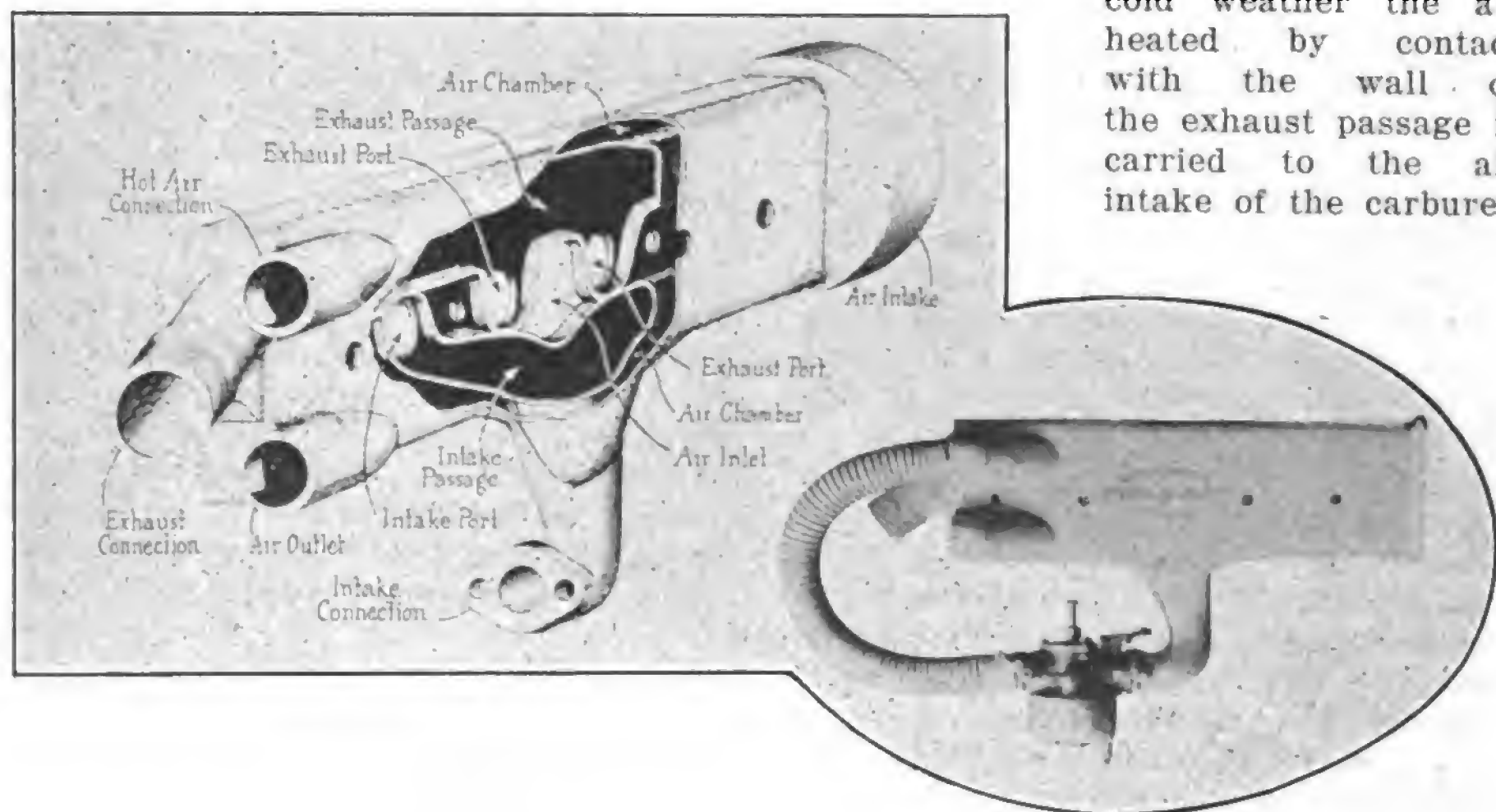
The surfaces of the intake passage, heated by the exhaust gases, and the cooling surfaces of the air ducts, are so proportioned that at the lowest engine speed the heat of the exhaust will raise the temperature of the fuel so it will be most economically consumed. If the engine speed is increased the temperature

of the exhaust is compensated by the greater velocity and volume of air passing through the air ducts.

The accompanying illustration shows the intake manifold passage, which is in the lower part of the casting. The division between the intake and exhaust pas-

passage and the intake passages are air ducts, the latter being bell-shape at its forward end.

The air passages are separated by a horizontal division wall, each passage terminating in an outlet to which an air conducting pipe may be connected. In cold weather the air heated by contact with the wall of the exhaust passage is carried to the air intake of the carbure-



At Left, a Sectional View Showing the Internal Construction of the Thermoautomatic Combination Manifold; at Right, the Entire Unit with Stove Connection.

sages are so designed that parts of it are common to both, these common walls being the surfaces that heat the intake passage. At the center, opposite the inlet, the upper wall of the intake passage bends downward and it is cooled by external air entering through a transverse duct immediately above the bend. The exhaust passage is in the upper part of the casting. Surrounding the exhaust

or, the upper duct thus serving as a stove for the air supply in winter. In higher temperature the pipe is detached from the upper outlet and attached to the lower, so that during spring or autumn the lower duct serves as an air supply stove. In hot weather both outlets are left open and the ducts become ventilators that are claimed to be effective in keeping the temperature low.

POWER VEHICLE BODY BUILDING ITS ONLY CHANCE.

Carriage Factories, Ltd., Montreal, P. Q., was organized to build and sell animal carriages in Canada, and while production was reasonably satisfactory, the concern was never profitable, no common stock dividends being paid and preferred dividends being deferred. In other words, the Canadian market for carriages was not sufficient to insure profits. Various expedients were resorted to, but none of these was profitable. Now the concern has experimented in building bodies for power vehicles with considerable success, and it has several large contracts in sight. If these are consummated there is reason to believe the industry will be continued and ultimately become profitable.

DWIGHT GOES TO GENERAL MOTORS CORPORATION.

John H. Dwight is now assistant general manager for the Saginaw Products Co., Saginaw, Mich., a division of the General Motors Corporation, having resigned as vice president and general manager of the Belle City Malleable Iron Co., and the Racine Steel Castings Co., both of Racine, Wis.

Highway Courses At the University of Michigan

Beginning Jan. 24 courses in highway transportation will be taught at the University of Michigan at Ann Arbor, Mich., the intention being to inaugurate this tuition directly following the conclusion of the highways transport conference in connection with the Chicago truck show. This will be the first university course of the kind in America. President Arthur H. Blanchard of the National Highway Traffic Association will direct the courses, which is expected to attract a considerable number of students.

Statement is made that the courses are intended to develop highway transport engineers, which is primarily essential to the promotion of a comprehensive national highway system, and the scope of the training must be broader than is required for many other technical studies. The fundamentals for the course will include the following subjects:

History of American transportation and rural development; English highway transport methods and legislation; inter-relationship of highway, waterway and railroad transportation, and the influenc-

ing factors of distances, rates, kinds of freights and equipment; port and warehouse facilities; inter-relationship of highway transport, good roads and rural development; American traffic legislation, including national, state, county, township and municipal laws, licenses and traffic regulations; fundamentals of highway engineering affecting economic highway transport; American highway transport methods and transportation surveys. Next year the University of Michigan will offer 10 courses in highway transport engineering to its students.

REED COMPANY GETS LARGE EXPORT ORDER.

An order for tractors that will amount to \$500,000 has been received by the Reed Foundry & Machine Co., Kalamazoo, Mich., builder of Reed tractors, and production is to be begun the first of the year. The order was conditional upon early delivery and the Reed company had the facilities and materials available. The machines, which are to be exported, were sold through Charles E. Howe, 299 Broadway, New York City.

The Reed company has been producing tractors in quantity for a considerable period and is now working on a large order for an Ohio distributor.

SELLING FULLY EQUIPPED TRUCKS

Summary of a Sales Manager's Experience Covering a Period of Nine Years Shows Greatly Lessened Sales Resistance

By A. E. Schaefer, Sales Manager, Gramm-Bernstein Motor Truck Co., Lima, O.

THE appended article is the text of an address delivered at the annual convention of the National Association of Motor Truck Sales Managers, held at Detroit, and presents the opinion of the executive of a concern that had had long experience and was well qualified to discuss the subject from the sales angle. This paper was discussed to considerable length:

I presume I have been asked to read a paper to the association today on the subject of "Fully Equipped Motor Trucks," because of the fact that my company happens to be the first to publicly advocate that practise, though, perchance, it may not have been the first to have seriously thought of it, rather than because of any superior knowledge which they or I may have on the subject, and shall, therefore, attempt to treat it from that standpoint and in doing so, give you without any bias, the benefit of our experience and observations.

Let me preface all of my remarks by saying that in our opinion there is nothing new or novel in the proposition, but that instead, to our minds, there exists a real demand for what we are doing, backed by sound merchandising sense and well established precedent, all of which definitely point the way we are headed.

An Early Experience.

If you will pardon a personal allusion, I would like to take you back to 1910, when the passenger car industry was in its swaddling clothes and a state of more or less chaotic transition.

All manufacturers were then groping and striving to know the wants of the market.

At that time I was a motor car manufacturer on my own account, doing business in Cincinnati.

Our company had been making some thousands of horse drawn vehicles a year and, of course, had some "horsey notions."

That at least was what we were accused of, when we threw a bomb into the trade by being the first to announce a fully equipped passenger car.

Such equipment then included acetylene gas generator, lamps, bulb horn, top with curtains, windshield, speedometer, foot rail and robe rail.

My partner and self were roundly berated and called all sorts of things for our stupidity in giving away so much that had previously formed the basis of extra profits, and the prediction was freely made by the wise ones in the industry that the movement would begin and end with us.

However, all of you here know whether it did or not.

So much for precedent.

What Experience Has Developed.

Now I simply want to say in passing that while the automobile sales manager did for some years plume himself and arrogate to his position a super-knowledge of marketing and, as he styled it, "how to put it over," I for one have never been able to see where he has taught general merchandising anything, except the two valuable features of getting advance cash deposits on future contracts and selling his goods sight draft with bill of lading, both of which were invented, born and nurtured of necessity.

Outside of those features the nearer he has followed well established stable



A. E. Schaefer, Sales Manager of Gramm-Bernstein Motor Truck Co., Lima, O.

ideas of merchandising the stronger and sounder his organization has become.

General sales management to my mind at once implies professional merchandising ability, in the exercise of which we all of us in better or poorer fashion attempt to learn what is the public demand, what is the line of least resistance in meeting that demand, and the best way to work in harmony with both.

One of the tests I like to put to any question is "How I would like to be approached with it?" as well as "Will doing it in a particular way conduce to the ultimate best good of the industry?"

Now to start with, you all know that except in very isolated cases no truck can be used without a cab of some sort, as protection to the driver, and if a cab, why not of a type which will make driving comfortable for all weathers and climates? That being so, doors, wind-

shield and curtains are indispensably necessary.

When attending a truck owners' conference here in Detroit a year ago, one of the speakers referred to the fact that one of the greatest difficulties they had been up against was to get good drivers—that they had first tried their former teamsters, but as they were the poorest and most unreliable class of labor known, they naturally were not successful as motor truck drivers.

Someone thereupon asked why it was that teamsters were so bad and the speaker replied that on account of their having to be out and unprotected in all kinds of weather it was impossible to get a man as a teamster who could do anything else.

That being so, does it not point the way to better truck drivers and, consequently, better results with trucks for both maker and user, if we can so equip them as to attract a higher class of help.

Considering the Sales Possibilities.

Now in progressing further on the subject, let us start at the front of the truck and work back.

Take the radiator guard, there are enough of these bought and paid for as extras each year to convince any one that there is a real need for them, and just to the extent that trucks multiply in number just to that extent will the need for guards increase.

The radiator of any automotive vehicle is by reason of its location, construction and function a vulnerable and vital unit, hence it is only good sense to protect it from damage—not alone on account of the cost of repair, but for the more cogent reason of obviating a lay up of the truck.

In fact, anything that can be done within reason to keep trucks out of the repair shop and in active service will conduce to their wider use and the greater prosperity of the industry as a whole.

The Sales Value of Equipment.

The motometer is another small, but valuable piece of equipment we have found, because by its tell-tale qualities the driver is quickly informed if he has overlooked filling up with water or oil, or if for any reason either one had leaked away, the fan belt had broken, the water pump key had sheared off, oil pump or lines had broken or clogged, etc.

Under any of those conditions motors heat up quickly, especially under heavy duty and slow running, and if conditions are not promptly relieved, scored cylinders, burned out bearings and other serious troubles ensue.

Electric generators and lights: It seems almost needless to argue in favor of or as to the necessity of electric light-

ing equipment as against oil or Prest-O-Lite gas, because while when Mr. Gramm first exhibited an electrically lighted truck at Madison Square Garden in 1910, such appliances were not satisfactory and with their batteries would not successfully withstand the rough jolting of hard tired trucks, still all of you know from your own experiences that electric generators with lights are thoroughly satisfactory these days, and, in fact, where trucks are driven after night fall, especially in interurban work, there is no other form of lighting that can at all compare with it.

You would scorn the man who would try to induce you these days to accept oil or gas lights for your house or passenger car; therefore, is there any reason since electrical lighting equipment is now made right for trucks that you should try to palm off something passe and antique on the truck buyer, simply because you can get away at a less cost.

With the installation of electric generators and heavy duty batteries an ample supply of "juice" is assured, so there then remains no reason to equip with hand horns as against the better and easier operated electric horn.

In fact, it can be easily proven that many a costly accident has been averted by the quicker and better warning given by the more modern signal.

Distance Record Is Necessary.

Passing to hub-odometer, which some have argued is not a necessity, largely because they do not equip with them, may I ask how else in reason the owner may determine the mileage his various trucks make, what his cost is per ton-mile for gas, oil and tires, secure proper tire adjustments, etc., or how often he should drain his crankcase in various seasons to keep his lubrication on the safe side.

Next comes army towing hooks: I wish I could have had some of you gentlemen down at our plant a few weeks ago when one of our old chain drive, six-cylinder trucks was being towed in from somewhere up the state, on account of a connecting rod having let go and gone through the case.

It was one of the heavy duty type dumps, capable of hauling about seven tons and consequently some load to drag along.

Needless to say it did not have towing hooks as part of the equipment and so the towing was done by means of a chain around the front cross member, while the fellow who did the towing also did not have a drawbar and consequently both front and rear cross members were pulled entirely out of shape and alignment.

In the case of the dump it was necessary to not only heat and straighten out the front member, but also to re-rivet the front spring brackets, as well as put in new rivets further back, where they had been started by the distortion at the front end.

Needless to say, that notwithstanding the age of the old chain drive truck, its owner authorized towing hooks added to the repairs.

The foregoing applies equally strong or stronger to the need for spring trailer

drawbars, without which serious damage may result to the rear end of any truck towing another by reason of distorting rear ends and loosening corners, thus allowing transverse frame action, bending of rear shackle bars, etc., etc.

There is also another very great reason for the addition of that equipment and that is to increase the efficiency and economy of the motor truck as a very modern medium of transportation by hauling one or more trailers.

The trailer manufacturers have been wide awake and active; they are educating the truck owner along trailer lines and we are not wise as sales managers if we do not insist on our product being equipped to meet these newer conditions.

Now just a brief word in behalf of the dealers' interest in this matter and I am done.

Would you buy a passenger car stripped and then start all over again and buy top, curtains, electric lights, horn, robe rail, foot rail, extra seats, etc., or would you demand that the dealer price complete such an outfit as you told him you were looking for?

Or if you were on the dealers' side of the fence, would you like to first sell a man your truck and then go back after perhaps a hard wrestle on the major sale and have to go all over the case again by selling him piece meal the things you call extras, but which you know are actual necessities and the lack of which would not enable him to operate his truck as satisfactorily and economically in the long run?

How many dealers are there also that when it comes to these so-called extras, get full price for them?

Do they not instead, give many of them away entirely, thus forming only one more avenue for insidious price cutting and consequently reducing their average margin of profit? A thing we should all labor against his doing; because if the dealer does not make a proper and adequate profit he will not continue long to handle any line, but will continue to change until he finally gives up truck selling altogether and tackles something else more profitable.

Now I believe that this association, young as it is, has already impressed much of the automotive trade of its intention and ability to do constructive things for the industry. Therefore, why not rise to the occasion, standardize on what shall continue a complete motor truck chassis and thus be the Moses that shall lead the trade out of much of the wilderness of irregularity that has obtained and into the promised land of a more stabilized condition with resulting better profits.

We say emphatically, "don't put off the evil day" if you must call it that, but recognize changed conditions and necessities of the trade and sell your product fully equipped.

NEW MARTIN AUTOMATIC FIFTH WHEEL.

What is stated to be a new automatic fifth wheel for semi-trailers that has unusual and exclusive qualities has been invented by C. H. Martin and will soon be produced commercially by the Martin Rocking Fifth Wheel Co., Springfield, Mass. Mr. Martin was one of the first, if not the first, to study the utility of trailers and power tractors, and he invented and patented a demountable or detachable coupling for tractors and semi-trailers widely known as a fifth wheel.

This consists of one section that is mounted on the tractor on a spring-buffered shaft that will yield to any angle to conform to the movement of the semi-trailer it supports, and this shaft carries a center plate into which is fitted the stub of the heavy turntable section secured to the body of the semi-trailer. When coupled there can be no stress upon either tractor or trailer body.

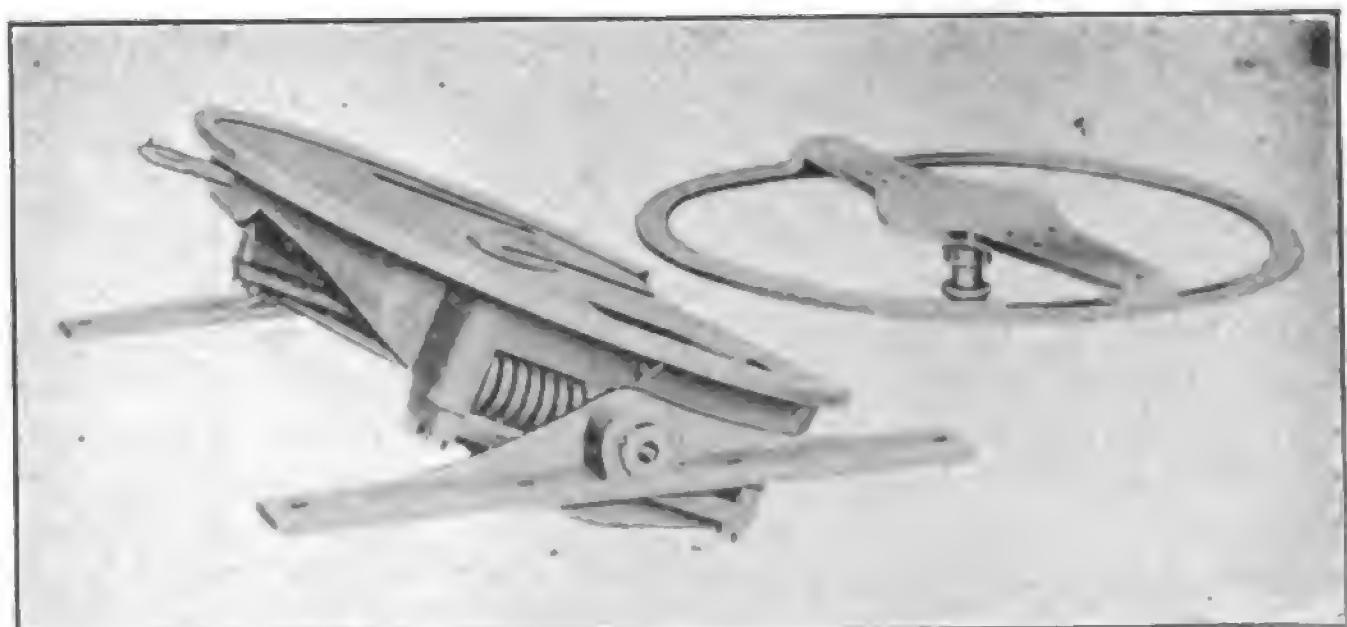
All the semi-trailer couplings have been designed so that by raising the forward end of the semi-trailer the body could be detached, the weight of the body maintaining the couple. Jacks have been necessary to raise the bodies to uncouple and support them when uncoupled. Claim is made that no jacks are necessary to couple or uncouple the tractor and semi-trailer with the new Martin automatic fifth wheel, which combines in one unit a coupling device and a cam by which the front end of the semi-trailer may be automatically lifted. The accompanying illustration shows the unit tractor and body sections separated.

RYAN IS STROMBERG CHAIRMAN.

J. R. Coffin has been elected vice president and a director of the Stromberg Carburetor Co., taking the place of H. C. Stutz as a director and Allen A. Ryan as vice president. Mr. Ryan resigned from the vice presidency to become chairman of the board of directors.

ROUSE HEADS SALES PROMOTION.

C. F. Rouse has been promoted from assistant sales manager of the General Motors Truck Co., Pontiac, Mich., to the head of the new department of sales promotion. M. J. Kates has been appointed assistant sales manager.



The Units of the New Martin Fifth Wheel for Semi-Trailers. Is Automatically Coupled and Uncoupled.

INDESTRUCTIBLE STEEL DISC WHEEL

SIX essentials are claimed by the manufacturers of the double disc pressed steel wheel, built by the Indestructible Wheel Co., Lebanon, Ind., a concern that has made steel wheels of different types since 1908. These essen-

are each constructed of two discs of pressed steel that are bolted to the hubs and riveted to the rims, of different sizes and weights suited for all passenger cars and trucks. They are produced commercially and the company now has facilities to produce these in considerable volume.

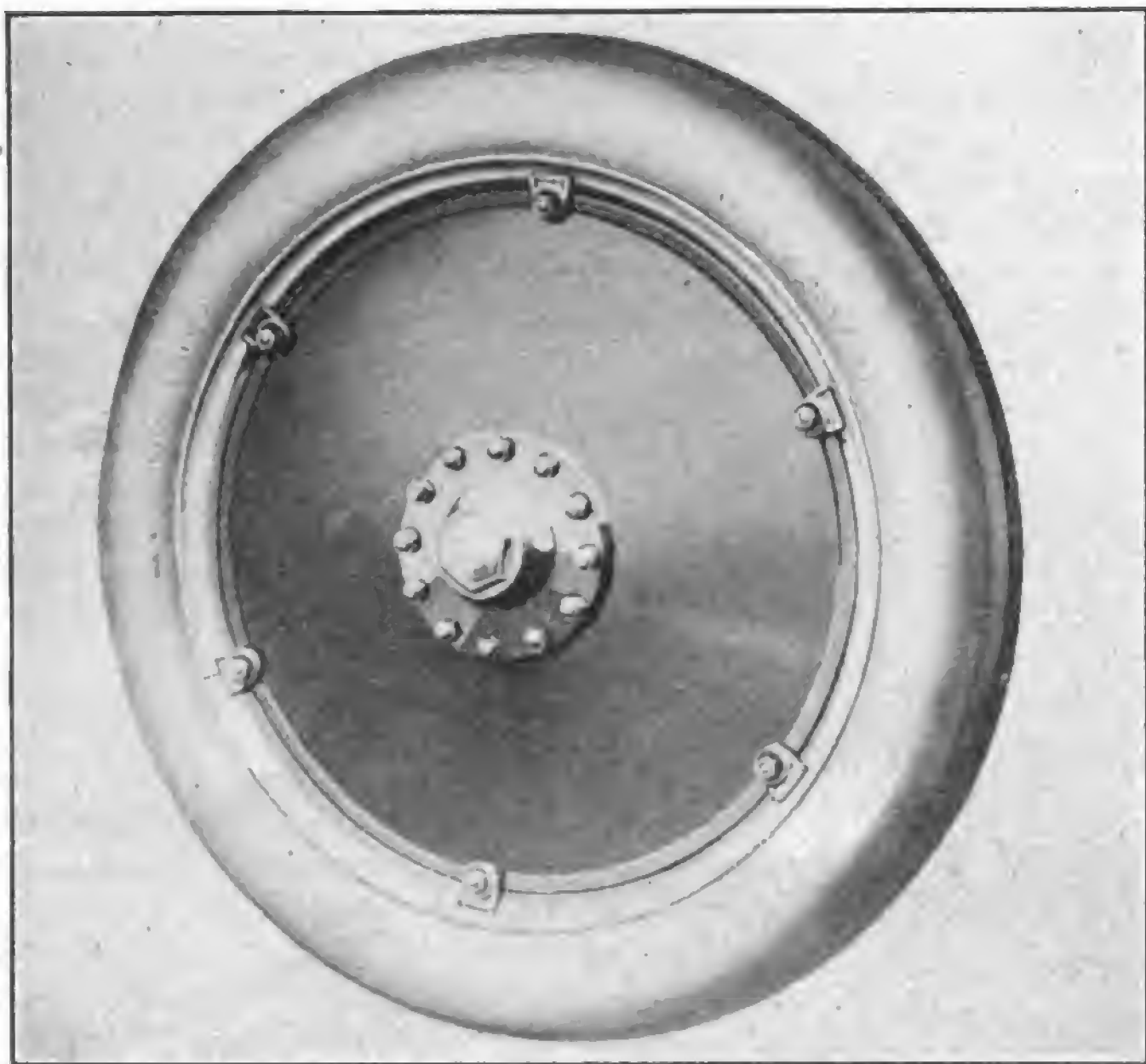
The wheels are equipped with Firestone demountable rims, which is a standard product. The discs are formed so that the valve stem for pneumatic tires comes through at the back of both sheets of metal and in an indentation or recess in the sheet, so that the inflating hose from the pump or compressed air service can be attached quickly and easily and it is always accessible.

mendations become a problem of stresses that is met by the application of the triangle and the method of moments.

The manufacturer claims that the method of construction affords the maximum strength with minimum weight. The discs are formed with long flanges that are riveted to the felloe bands, each supporting and strengthening the other. All of the road shocks are distributed to the entire circumference of the wheel. In the event that a wheel strikes an obstruction, such as a glancing contact, or touches against a curb, the stresses are compensated by the triangular construction, which compensates, absorbs and cushions them. This is claimed to insure against any destructive force at the rim. Claim is made that no shock can be transmitted with full force to the hub barrel, the wheel bearing and the axle, minimizing mechanical deterioration.

Because the wheels are comparatively light the unsprung weight is minimum and less power is required to start from anchorage and less braking pressure to stop, this reducing the stresses upon the power transmission system, brakes and wheels and tires. This means lessened fuel consumption and less tire wear, two important items of tire expense.

The wheels are not affected by climatic changes and do not warp or shrink or swell, maintain alignment and are claimed to have better appearance and are more easily cleaned. That the wheels are always concentric and there can be no flats are qualities that are urged as especially desirable for truck equipment, where continuous service and freedom from repair are material factors in general operating expense.



An Indestructible Steel Disc Wheel Equipped with a Demountable Rim and Pneumatic Tire, the Design of All Sizes Being the Same.

tials are demountable rim, strength, concentricity, light weight, appearance and price, all of which are regarded as substantial factors influencing the use of wheels of this type.

The wheels, as the name would imply,

Statement is made that these wheels are built on the triangle principle for reason that the triangle is the one polygonal form which cannot be changed by distorting one of its sides. When a known load is to be carried the wheel recom-

WEINHARDT SUPREME MOTORS CHIEF ENGINEER.

Robert A. Weinhardt has been appointed chief engineer in charge of production and inspection for the Supreme Motors Co., Warren, O., and has assumed the duties of that position. The Supreme Motors Co., which is not yet in production, has \$2,000,000 capital. A. H. Zimmerman, formerly secretary-treasurer of the Continental Motors Corporation, Detroit, has now associated with him in the new company V. M. Smith, formerly superintendent, and Weinhardt, who was for a considerable time a member of the engineering staff of the Continental organization.

Weinhardt in 1906 was designing engineer for the Nevada Motor Car Co., Chicago, which built a four-wheel driven machine for desert transportation, and at that time designed the disc wheel so generally used for trucks. Next he went to the Multi-Motor Gas Engine Co. of Minneapolis as chief engineer. Later he designed the original engine for the Falls Motor Co. and he was afterward connected with the Sommer & Rosson Co., Chicago, and the Henry Motors Co., Muskegon, Mich., as engineer. In 1912 he went to the Continental Motors Co., and became assistant chief engineer. He

next was appointed superintendent of machinery for Chicago, winning appointment in a competitive examination in a field of 26 men. A year and a half later he resigned to return to the Continental company, and remained with it until he resigned to join the Supreme Motors Co. He was one of the engineers that developed the class B engine for standardized equipment for the United States army, with a staff of 12 men living in Washington for three months perfecting the details for production.

GOODYEAR TRUCK HAULED WOOD.

During the fuel famine the city of Columbia, Mo., found itself cut off from its coal supply, but with a good supply of wood available several miles from town. Then arose the difficulty of transportation, but at this juncture a three-ton demonstration truck of the Goodyear Tire & Rubber Co., Akron, O., in charge of M. L. Carr, entered town on a tour of several states to show the utility of motor trucks to farmers. Its use was immediately offered and with the assistance of 20 men to load, all the available wood was transported to the central depot of the fuel administrator in one afternoon and much inconvenience was obviated in the community.

MANHATTAN MOTORS CORPORATION IS SELDEN EXPORTER.

The Manhattan Motors Corporation, New York City, has been organized, headed by Edmund N. Stone, as president, H. D. Chapin as vice president and Frank L. O'Dell as secretary and treasurer, and Hal T. Boulden and R. H. Salmons, with the three officers named, directors. A sales and service station has been established at 238-42 West 19th street. This succeeds the original company bearing the same name, which was controlled by Gaston, Wigmore & Williams, which was exporter of Selden trucks. The company will continue to be distributor for Selden trucks for New York City.

AUTOMOTIVE CORPORATION TO HAVE NEW PLANT.

The Automotive Corporation, builder of Automotive tractors, a type that can be driven by an operator walking or riding any independent implement that may be coupled, by three lines, is to erect a factory at Toledo, O., on property recently acquired. The contract for the first unit of the plant has been made and construction is to be begun as early as weather conditions will permit.

NEW RAYFIELD THERMOSTAT

ENGINE efficiency is usually highest with reference to power production just before the water in the cooling system boils. If it is maintained at this point the heat is effectively diffused and there should be good fuel and lubricant economy.

Starting any engine depends largely upon the combustibility of the fuel. If the gasoline or other oil will volatilize so that the cylinders can be filled with a gas that will ignite the charges will burn and power will be developed, but there will be irregularity of operation until the water of the cooling system is heated. The main reason why engine function improves as it is operated is that the fuel is heated and becomes more and more combustible until it reaches the height of power production with the carburetor setting.

The water of the thermo-syphon cooling system will not begin circulation until it has been sufficiently heated to have movement by gravity, but the water of the pump or circulating cooling system will begin to circulate as quickly as the engine and pump is started. Naturally more time is required for heating the water in movement than when it circulates by gravity, but as pump circulation is more general than thermo-syphon a very large number of the cars and trucks in use heat slowly, this condition being the more pronounced with the fall of temperature.

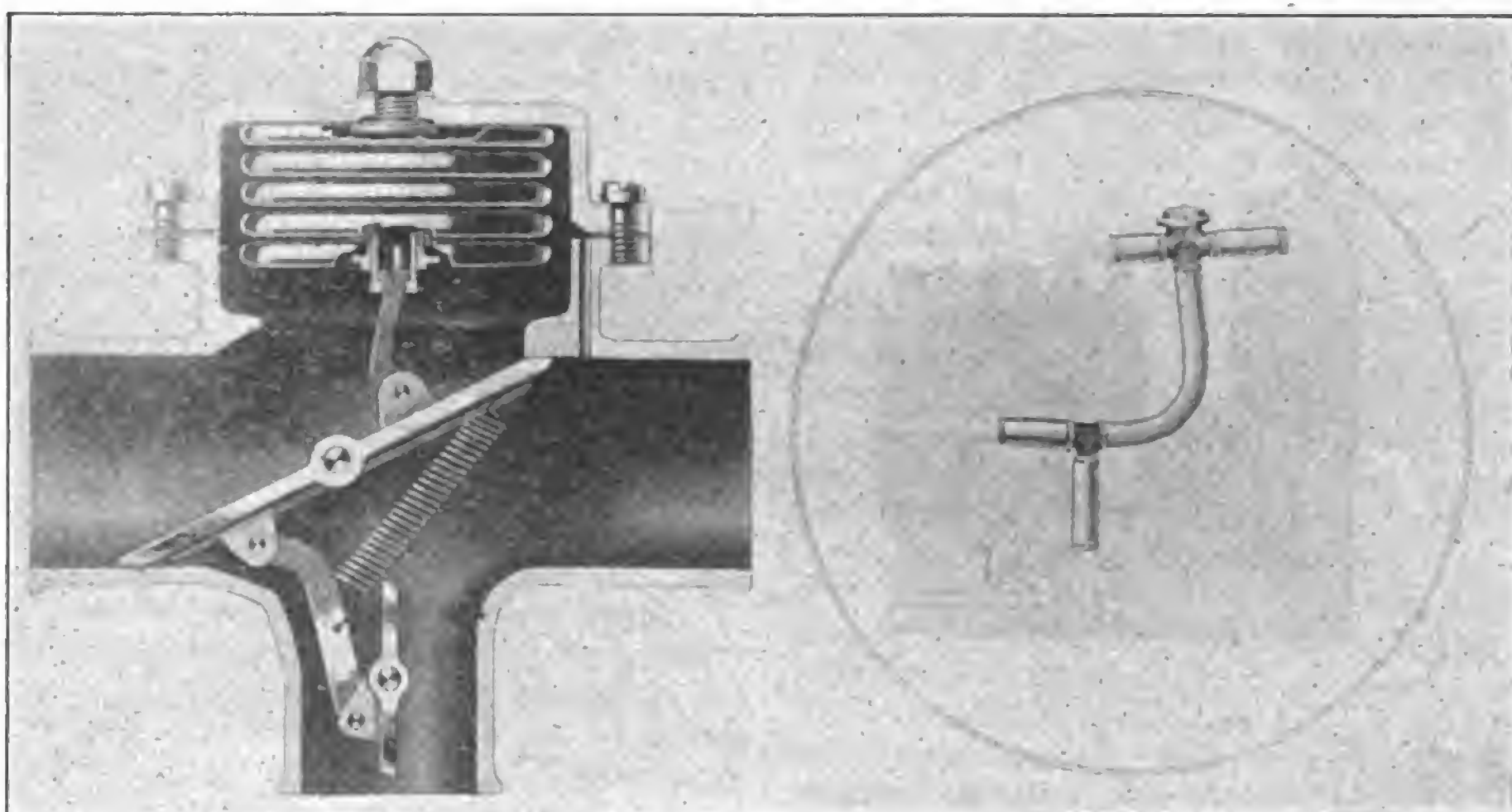
Starting in summer is comparatively easy because the gasoline is more volatile and the lubricating oil that coats the interior of the engine is more viscous. When the temperature of the engine is below freezing the oil is materially thickened or even congealed, and this will greatly retard the movement of the pistons in the cylinders. This retardation may be sufficient to require double the impulse that would be necessary in summer, for the resistance of compression, the friction of the pistons and rings and cylinders and the anchorage of the congealed lubricant must be exceeded by the power applied at the crank or starter.

If the engine is cooled by water circulation by pumpage and the height of power production cannot be realized un-

til the cylinder jacket is to a temperature of at least 180 degrees. For engines of this type a thermostatic valve has been made by the Beneke & Kropf Manufacturing Co., which has been given the trade name Rayfield. The object of the valve is to prevent the circulation of water in the cylinder jacket until the temperature is from 155 to 160 degrees, by-passing the water forced by pump through the radiator. As the valve will open gradually the movement is restricted until the maximum temperature is reached, when the circulation is full and

an expanding one-piece diaphragm. The valve mechanism of the thermostat is such that when the engine is started the water is not forced through the cylinder jacket, but by-passes through the outlet manifold, the thermostat and the radiator intake and radiator. In other words, the circulation is maintained through the radiator, but not through the cylinder jacket until the water in the jacket is heated to 155 or 160 degrees.

At this temperature the diaphragm of the thermostat expands and opens the valve, so that the water passing will



Rayfield Thermostat for Cooling System Control: At Left, the Valve Control Shows in Cross Section; at Right, the Device Installed.

the cooling is in ratio to the speed of the engine and the draft of air through the radiator. Obviously the cooling system must be such that the engine will not overheat in the hottest day of summer, and in at least reasonable condition for use.

The Rayfield thermostat is extremely compact and it may be installed in any cooling system designed for pump circulation. It is placed between the engine and the radiator, on the radiator intake connection, and a by-pass hose is connected from the thermostat to the radiator outlet between the pump and the cylinder jacket. The thermostat is operated by the variance of temperature on

maintain the minimum temperature. The thermostat is constructed of bronze and there is no reason for deterioration, so that normally it ought to be efficiently serviceable during the life of an engine. A safety device has been incorporated in the construction so that should the diaphragm become punctured the valve will open and the normal circulation will continue. Claim is made that the thermostat when installed on an engine will economize the fuel, prevent gasoline leaking to the crankcase and minimize the accumulation of carbon on the spark plug electrodes and the valves, to say nothing of making practical development of greater power of the engine.

FEDERAL TRANSPORTATION CONTROL PROPOSED.

Suggestion is made that were a presidential cabinet office created that would have direct jurisdiction over highway transportation and direct the activities of the Federal government for the general promotion of power vehicle haulage, the result would be from every point of view especially satisfactory.

There is now no official that has more than incidental interest in road transport. The different governmental departments, such as the postoffice division, which operates transfer, collection and distribution of mail in cities and rural sections; the department of agriculture, which operates as an adjunct the office of

public roads; the war department, which has varying needs for transportation and must provide for such military operations as are essential for the army, and, to a limited extent, the navy department and department of the interior, use trucks.

The interstate commerce commission may have some authority over the use of vehicles that haul freight from the one state to another, but the individual states have direct jurisdiction under the "police" power that is assumed, and for that reason laws and ordinances and regulations are not uniform and are often in conflict. The proposition is that uniformity of law and its enforcement with reference to power vehicles would be vastly superior and no interest suffer.

WILL BUILD NAPOLEON TRUCKS ONLY.

The Napoleon Motors Co., Traverse City, Mich., which several months ago established itself in that city, has discontinued the manufacture of passenger cars and will produce trucks exclusively. The last car was turned out of the factory Dec. 1. The company has so large a truck business developed that its present factory, which has about 82,000 square feet of floor space, is inadequate for production, and additions to the works will be made shortly—probably as early next spring as construction can be begun. W. G. Rath is general manager for the company.

ONE-DAY LOCAL DEMONSTRATIONS FOR 1920—WILL MANAGE NATIONAL SHOWS

DEMONSTRATION of tractors in 1920 will be local in character only. They will be optional with the individual manufacturer and will be limited to one day.

For the first time since 1913 there will be no national demonstration.

This policy was determined at a meeting of the Tractor and Thresher Department of the National Implement & Vehicle Association held at Chicago, Dec. 2-3, when the executives made recommendation that no national or regional demonstrations be held the coming year.

This decision was reached after conclusion that national and regional demonstrations have served their purpose and that the country no longer requires proof of the utility or efficacy of the tractor as labor saving farm equipment.

There was opinion that grouping of the latest models of tractors and tractor equipment and accessories at numerous localities will afford those interested in power farming better opportunity of keeping informed of the constantly increasing development of these machines and devices.

The same resolution that determined the policy of the association with reference to tractor demonstrations also made recommendation that the demonstration and tractor show committees be consolidated into one committee to be known as the National Tractor Demonstration and Show Committee. This body was created and it will in future have charge of all exhibitions of steam and gas tractors, threshers and other tractor drawn or driven machinery, as the committee may agree upon. This supervision will also include all indoors exhibitions generally known as tractor shows.

Manufacturers to Operate Shows.

The tractor manufacturers decided at this meeting to take into their own hands the management of tractor shows of national scope, determining to hold or lease one or more shows of such national character each year and to admit only such manufacturers who will abide by the rules of the committee with regard to the policies of the department as to tractor demonstrations and shows.

The department made request of the management of the Kansas City Tractor Club's show to change its show dates for the exhibition to be held in that city so as to obviate conflict which might arise as a result of the dates of the Kansas City and Wichita, Kan., shows. Because of this the Kansas City Tractor Club postponed its show until the week of Feb. 16-21, which change will make possible all who desire exhibiting conveniently at Minneapolis, Wichita and Kansas City.

Other Subjects Determined.

The Terms Committee, through Chairman Finlay P. Mount, made announcement of the sentiment of that body that there should be no change in the terms as they now exist. He expressed the hope that these manufacturers who have

felt constrained to go beyond the limits will be able to comply with the terms as recommended.

C. S. Brantingham made report on the elimination of separator sizes and stated that there had been marked improvement in the elimination of the class. There was reason to believe there could be still further reduction in the number of sizes in some instances.

E. J. Gittins Elected President.

The annual election of officers for the department took place, and because of the determination of J. B. Bartholomew of the Avery Co., who has been president for a number of years, to retire, the choice for the executive of the division was E. J. Gittins of the J. I. Case Threshing Machine Co.

The other officers elected were as follows: Vice president, G. P. Alexander; secretary-treasurer, E. C. Merwin; executive committee, J. A. Everson, chairman; Finley P. Mount, E. J. Gittins, J. B. Bartholomew, E. C. Merwin, H. P. Goodling, George M. Peek, Dent Parrett and C. S. Brantingham.

State and Federal Tractor Tests.

One of the interesting developments of the meeting was the address of Professor L. W. Chase of Nebraska University, who in an illustrated talk showed what is being done in that state with regard to tractor testing. Professor Chase declared that the Nebraska law is boosting the tractor business among the farmers, as the latter have already learned to depend upon the agricultural colleges and the experiment stations, and, therefore, are ready to accept result of tractor tests conducted by governmental agencies.

Mr. E. B. McCormick, chief of the Bureau of Rural Engineering, in speaking upon the subject of tractor tests, indicated that the government expects to cooperate in this matter, and that the Department of Agriculture look forward to carrying on tests which will in no wise conflict with the state tests, but which will supplement them at present with the expectation of ultimately supplanting them.

Practical Test Is Necessary.

In outlining the program to be followed, Mr. McCormick said that the work as contemplated comprises a combination of laboratory and field tests. It is not the expectation to make these purely engineering or academic tests, for the department feels that the need is greater for what might be deemed a performance test.

As to the locality where these tests will be made the question is still open. The department had considered establishing an experiment station near Washington, but there is a quite general feeling that a central laboratory, or headquarters, should be provided somewhere in the Middle West, close to both the manufacturer and the greater percentage of users.

Thomas B. McDonald also of the Department of Agriculture, was expected to speak at the meeting, but was prevented from attending. However, he submitted a very interesting article upon the "Relation of the Department of Agriculture to the Farm Operating Equipment Industry."

Mr. McDonald corroborated the statements made by Mr. McCormick, declaring that the secretary of agriculture recognizes the importance of rating and testing tractors, and that he has made adequate in his recommendation to Congress for a sum sufficient to inaugurate this work.

Two principles, he asserts, should define the relations to the department to the agricultural industries: (1) Should determine the needs of the industry and find the best means of meeting them; (2) should carry on this cooperative activity in such a matter that the impositions of regulatory measures will not be necessary, but that the enforcement of these principles may be entrusted to the industry itself.

SWEDISH MARKET FOR FARM TRACTORS.

Washington, Dec. 9.—The market for American farm tractors and agricultural machinery in Sweden has large possibilities, according to information received by the Department of Commerce. The demand is favorable to American machines and implements, and the demand exceeds the supply. There are but four factories in Sweden, which have an estimated production of approximately 400 tractors, that also build power plows, threshing machines and portable engines. The tractor that has the most ready sale is of about 25 horsepower and rated from three to four plows.

An assembling plant is maintained in Sweden by a large American farm implement manufacturer, which affords service for its products as well. Most of the tractors in use have been imported from America and England. The high prices of grain, the scarcity of horses and the fact that Swedish farmers have prospered greatly since the beginning of the European war are pointed to as reasons why American manufacturers should exploit this market intensively.

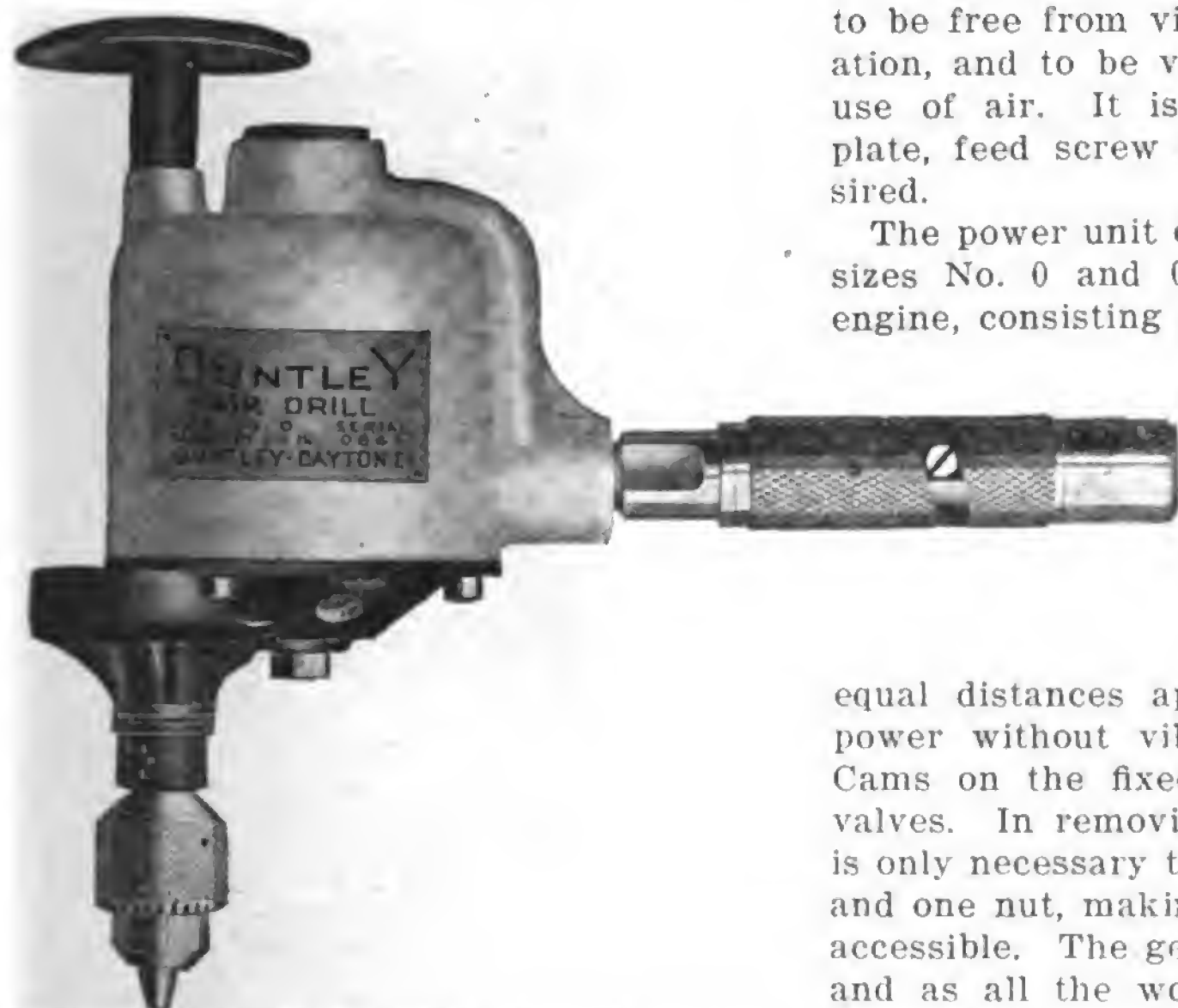
WILL SELL CASE TRACTORS AND CARS.

F. L. Allen has associated himself with the Crouse Motor Sales Co., Syracuse, N. Y., which concern will market Case tractors, built by the J. I. Case Threshing Machine Co., and Case cars. Mr. Allen was for years branch manager for the Case company at Syracuse and later was connected with the John Deere Plow Co. as a division sales manager. The Crouse company will establish a service station, a division of which will be organized especially for servicing Case tractors.

Garage and Service Station Machinery Tools and Equipment

NEW DUNTLEY AIR DRILL.

The Duntley-Dayton Co., 1416 Michigan Avenue, Chicago, Ill., builder of pneu-



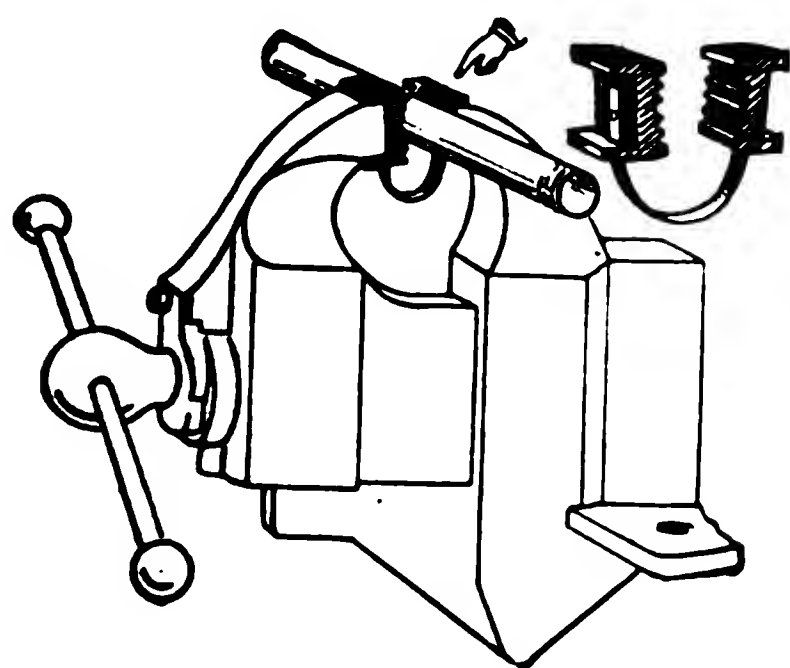
matic and electrical tools, is now producing the new Duntley Air Drill. This tool is said to be especially useful for drill-

ing holes in staybolts, steel truck bodies, frame construction, etc. The power unit is detachable and is instantly removable to facilitate repairs. The drill is stated to be free from vibration when in operation, and to be very economical in the use of air. It is fitted with a breast plate, feed screw or grip handle as desired.

The power unit of the Duntley air drill, sizes No. 0 and 00, is a self-contained engine, consisting of three cylinders and pistons mounted in a frame, the entire engine rotating about a fixed crankshaft or spindle. The cylinders oscillate from a fixed base and as they are located at equal distances apart a steady flow of power without vibration is developed. Cams on the fixed spindle operate the valves. In removing the power plant it is only necessary to remove three screws and one nut, making every working part accessible. The gear reduction is simple and as all the working parts run in a bath of oil, claim is made that overheating is next to impossible, and wear is reduced to a minimum.

BON VISE JAWS.

The Bon Manufacturing Co., Elgin, Ill., manufactures a brush fitting that finds ready use in repair shops and service stations, known as Vise Jaws, with which it is possible to use the ordinary bench vise as a pipe vise or for holding securely round bars of iron or steel. The device consists of two jaws shaped to fit the



main jaws of a vise and held together by a flat spring. These vise jaws occupy but little space and it is stated will fit any vise large or small, as the jaws may be spread apart or closed to take the different sizes of pipe or iron rods.

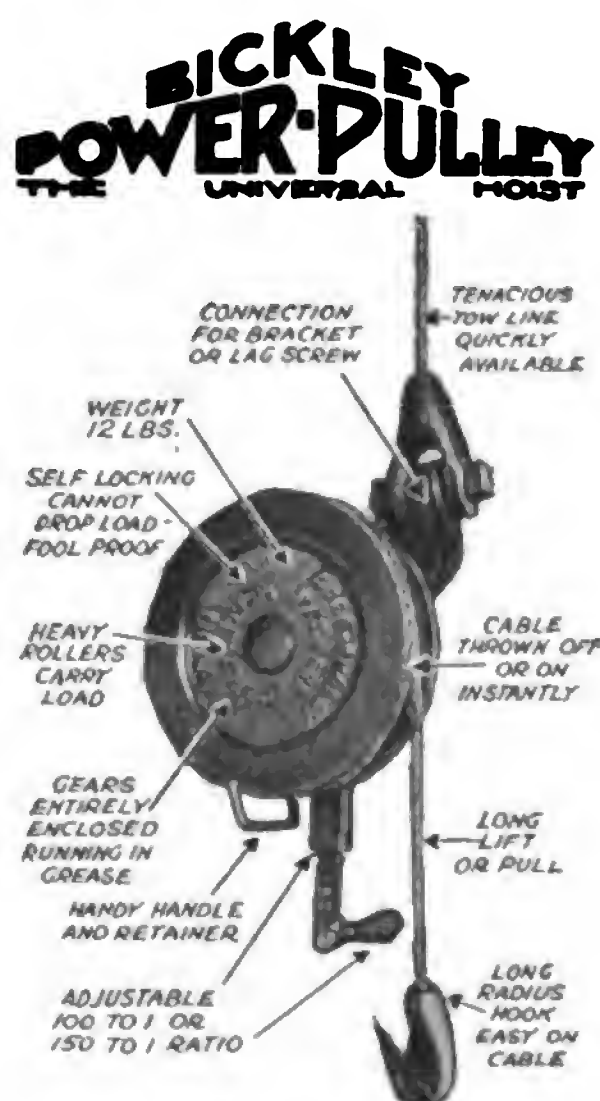
BICKLEY POWER PULLER.

The Bickley Manufacturing Co., Philadelphia, Pa., manufactures a puller by which the power applied at the crank is multiplied many times. The device consists of a patented pulley block that is operated by hand. The pulley is enclosed

in an oil tight case, the shafts being mounted on roller bearings and these and the gears are lubricated with graphite.

The manufacturer claims that the ratio of the pulling is adjustable from 90 to one to 150 to one, which makes it possible for one man to easily exert a draw bar pull up to a ton.

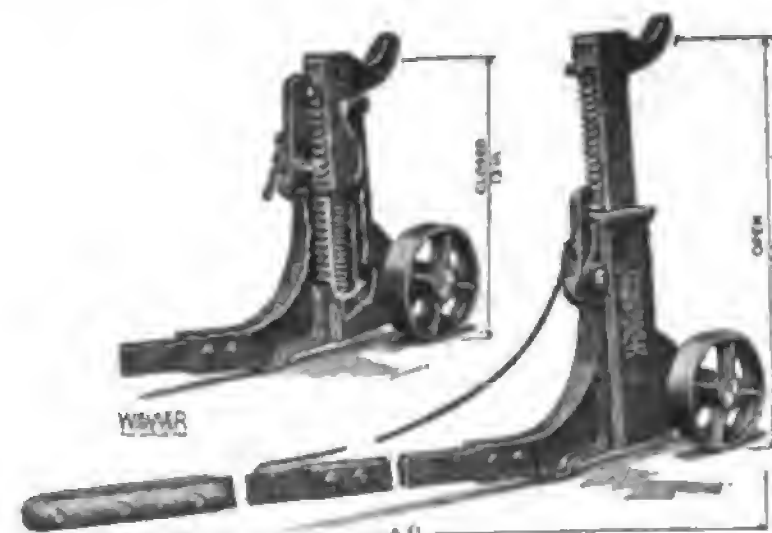
The pulley is operated by a short lever.



When in use a wire rope is fastened to the eye of the pulley and passed around some stationary object, as a post, beam, tree. The tow line is then fastened to the object to be towed and by working the lever forward and back the towed object is easily moved.

WALKER JUMP JACK.

The Walker Manufacturing Co., Racine, Wis., manufactures a series of high grade jacks for trucks and automobiles, included in which is the Walker Jump Jack shown in the accompanying illustration. This is a new design in jack construction and is claimed to be a decided improvement in these tools. It can be wheeled under the axle of the truck, the chain pulled by the operator, the jack rises and touches the axle and the



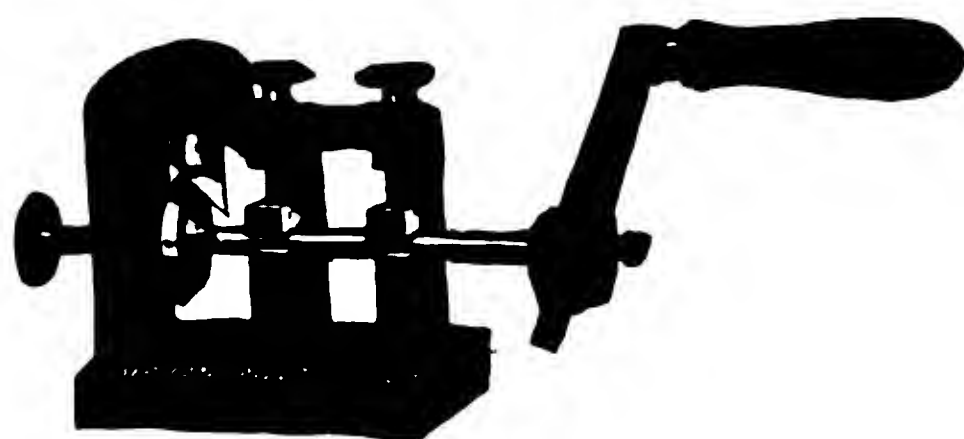
dog locks it in position. The handle is then pushed down, forcing the top of the rack over the center, raising the wheel of the vehicle three inches from floor.

Automatic setting of the rack by the enclosed spring cuts the time of operation to a few seconds. It is stated that this jack is particularly desirable where quick tire changing is necessary. The frame and rack are made of malleable iron, the handle of steel with a wood grip and the pawl which holds the rack is drop forged.

AMERICAN ADJUSTABLE VALVE GRINDER.

The American Valve Tool Manufacturing Co., 354 West 50th Street, New York, manufactures a valve grinding tool for the service station and repair shop, consisting of two tools in one outfit. One tool for refacing the seat of the valve and the second tool for trueing the face of the valve.

Each tool is adjustable and will fit



valves from one to three inches diameter inclusive. The valve facer is a bench tool that occupies small space on the work bench, is operated by hand and does its work with the precision of a higher priced machine, smoothing off the face, preparing the valve for grinding and insuring a perfect fitting valve. The re-seating tool cuts off all unevenness of the valve seat, preparing it for the grinding and reception of the valve, insuring a gas tight fit after grinding.

New Motor Truck Accessories and Supplies

R. & M. CONFORM PISTON RINGS.

The Modern Electric & Machine Co., Indianapolis, Ind., manufactures the R. & M. Conform Piston Rings. These rings are formed in three sections, the inner



or "bull ring" and upper and lower sections. Wear does not effect the inner or bull ring and all wear is taken by the outer rings. The manufacturer claims that this type of ring is absolutely gas tight and that two rings will prove as satisfactory on a piston as three. As the spacing between the rings is at different



points there is little chance of gas leaking.

The R. & M. Conform Ring is not an experiment, but has been used success-



fully by the inventor on all types of car and truck engines. Long life and economy are guaranteed by the maker. The rings are sold direct from the factory to the service station and garage trade or through the jobbing trade. A money back guarantee is given with all R. & M. Conform Rings.

THERMOID-HARDY UNIVERSAL JOINTS.

The Thermoid Rubber Co., Trenton, N. J., makes a rubber composition suitable for universal joints for motor trucks and passenger cars known as Thermoid-Hardy material.

Thermoid-Hardy joints are composed of three sections, each of several sheets of cotton fabric and rubber, placed fan wise so that the layers of fabric and rubber overlap. After the sections are com-



pleted holes are made that are reinforced with fluted steel washers. The three sections are placed side by side and bolted to the joint ends by bolts and castellated nuts, the nuts being held by cotter pins.

The Thermoid-Hardy joints are used on the drive shafts of trucks and tractors, and during the war were used on the war tanks. The manufacturer claims that their use minimizes wear of the gears in the gear sets and rear axles, as the vehicles can start with a more gradual application of power. The discs are so flex-



ible that when the clutch is engaged the forward end of the propeller shaft will revolve five degrees or more before the axle will turn. The result, the maker claims, is a smooth, gradual application of power with no shock or vibration.

NEW HYDRATE CELL TESTER.

The Service Station Supply Co., Detroit, Mich., is now making a cell tester of unique design for testing or short-circuiting the individual cells of storage batteries. The device consists of two hex special steel prods, three inches apart at the points with the upper ends assembled in a handle. A special patented nickel-chromium resistance of .01 ohm connects the prods. Suspended on props between the prods is located a voltmeter with

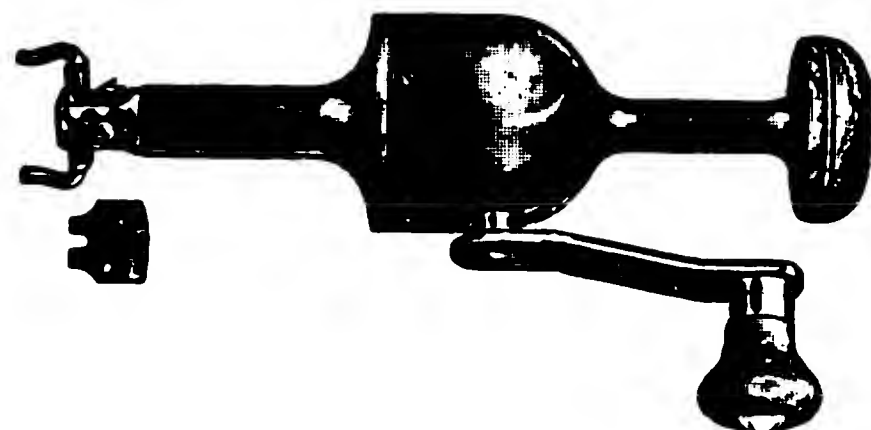
2-0-2 volt scale. The patented resistance varies but imperceptibly with change in temperature and will not oxidize or rust,



the manufacturer claims. The voltmeter is of the moving coil type of rugged construction.

GOODELL VALVE GRINDER NO. 288.

The Goodell-Pratt Co., Greenfield, Mass., is building a new valve grinder known as No. 288. This tool is especially handy in service station work where engine valves are ground. By means of a simple operating mechanism the spindle is caused to rotate back and forth when the crank is turned continuously in one direction. The cast iron housing, in which the working parts are enclosed, gives the tool sufficient weight so that pressure need not be applied to the valve seat.



Each tool has a polished hard wood crank handle and a lignum-vitae head. The frame is finished in red and black enamel. Both an adjustable spanner and a blade are provided so that the tool may be used universally. The length over all is 10 1/4 inches and the net weight is 3 1/4 pounds.

ANHEUSER-BUSCH WILL BUILD TRUCK BODIES.

The cessation of brewing by the Anheuser-Busch Brewing Association, St. Louis, Mo., and the desire of that concern to so far as possible make profitable use of its plant, which represents an extremely large investment, construction of truck bodies has been begun on a considerable scale.

The company for many years built its own wagons, and when it began the use of power trucks it bought the chassis and built bodies to designs that had been found by experience to be most suited to its purposes. The wagon shop, which built and maintained the equipment, had facilities for doing practically all work and was expanded to meet the demands of the company. Eventually it occupied a large four-story structure of concrete.

When brewing was discontinued the shop was idle and when Allan Baker, president of the Federal Truck Co. of St. Louis informed Edgar Gegenbach, formerly industrial commissioner of the St. Louis Chamber of Commerce, that truck buyers could not have bodies built promptly in the city, the latter suggested truck body building to the Anhauser-Busch interests. Investigation was made and with every facility in readiness endeavor was made to obtain custom work. This was successful and the shop was started under the management of Martin Kurz, who was superintendent of the department. Now the shop is working to capacity and there is every probability that it will be increased to whatever proportions may be necessary, and a profitable industry has seemingly been established.

BODY SPECIFICATIONS IMPORTANT.

In a preamble recently presented for consideration by the truck standards committee to the National Automobile Chamber of Commerce there is emphasized the importance of the retail salesman keeping in mind that in meeting the prospective truck owner's requirements the body is the factor that should determine the type and size of the chassis that should be purchased. The size and probable weight of the body and the amount of material it will be required to carry should be definitely determined before chassis specifications are furnished or prices quoted. For until the salesman knows the body specifications he is not in a position to decide what he should offer in the way of a truck, tractor or trailer chassis.

RAINIER'S INCREASED FACILITIES.

The Rainier Motor Corporation has increased its facilities at its plant at Flushing, Long Island, N. Y., for building bodies for its worm-drive delivery trucks, and is now prepared to get out any style of body desired for prompt delivery with any chassis. This is a convenience to the truck buyer who wants some particular type of body that is not usually made and also gives a selection of bodies peculiarly adapted to the Rainier truck.

GOODYEAR BUSINESS INCREASED \$37,000,000 IN YEAR.

Reports read at the annual meeting of the Goodyear Tire & Rubber Co., Akron O., Dec. 1, showed that the business for the past fiscal year was the most



F. A. Seiberling, Re-Elected President, Goodyear Tire & Rubber Co.

successful in volume and profits of any in the company's history.

Gross sales for the year ending Oct. 31 amounted to \$168,914,982.83, an increase of \$37,677,600.38 over the previous year. The net profits, subject to Federal tax, were \$23,277,245.28, as against \$15,388,190.74 for the preceding year.

Of the new issues of preferred stock, amounting to \$100,000,000, \$41,135,900 was subscribed by 30,409 individuals, rep-



P. W. Litchfield, Vice President and Factory Manager, Goodyear Tire & Rubber Co.

resenting every state in the Union, of which \$7,843,600 was taken by 17,407 employees of the company.

Within the year the Goodyear Tire & Rubber Co. of California was organized

with a capital of \$20,000,000 and the Pacific Cotton Mills Co. with \$6,000,000 capital. The new plant at Los Angeles will have a capacity of 7500 tires a day and the cotton pant 150,000 yards of fabric a week.

There are now on the pay roll 47,983 persons in the various world wide activities of the company, and the total production of pneumatic tires has reached 33,000 daily.

All of the directors were re-elected as follows: F. A. Seiberling, C. W. Seiberling, G. M. Stadelman, F. H. Adams, P. W. Litchfield, H. B. Manton, J. P. Loomis. Officers: President and general manager, F. A. Seiberling; vice president and manager of purchases, C. W. Seiberling; vice president and director of sales, G. M. Stadelman; vice president and factory manager, P. W. Litchfield; secretary and treasurer, W. E. Palmer; assistant secretary, W. D. Shilts; assistant treasurer, H. J. Blackburn; second assistant treasurer, H. H. McCloskey.

BETHLEHEM WILL BUILD ¾-TON TRUCK.

The Bethlehem Motors Corporation, Allentown, Pa., has determined a design for and has practically completed the manufacturing plan for producing a new truck chassis, which will be 1500 pounds load rating and be the smallest of the series of machines built. The experimental and development work has been practically completed and the machine will be built in considerable numbers beginning next month. The first of the machines built will probably be shown at the New York and Chicago truck shows in January.

The chassis will be equipped with a specially built engine, will be driven by a Spicer shaft and universal joints and a bevel gear rear axle. The engine will have a Bosch magneto and will be equipped with an electric starting and lighting system. The complete chassis will be sold for \$1495, and when desired it will be completed by installing a convertible body, which may be any one of five types as required. Conversion of the body can be made with little labor and in comparatively short time.

DURSTON GEAR CORPORATION DOUBLES OUTPUT.

The large plant of the Durston Gear Corporation, Syracuse, N. Y., has been increased to double its former capacity within the past few months. This company has just brought out a new model transmission which presents the most up-to-date features in design and construction. The gear and shafts are nickel-steel throughout. The main shaft is mounted on annular ball bearings and the countershaft gearset is of the cluster type, rotating on a fixed shaft.

All Durston transmissions are tested in a sound proof room in order that any noise may be readily detected, and all parts are carefully inspected by competent experts. Easy shifting of gears is claimed to be one of the prominent features of this new model.

AMERICAN TRUCKS IN AUSTRALIAN SERVICE.

About a year ago the Australian postal authorities in New South Wales found themselves confronted with a difficult transportation problem. Mails for the east coast of Australia, coming out of Adelaide and surrounding towns, were held up at Broken Hill near the terminus of the railroad. The Darling river, offering excellent transportation facilities to the coast, was 130 miles away. Mails, especially during certain seasons of the year, were heavy, a fact which demanded something more than the ordinary automobile to carry them. The country was only sparsely inhabited, which meant that a breakdown would tie up operations for quite a while. Added to this was the fact that the roads were none too good.

Morrison Brothers, a leading business concern of Broken Hill, saw the difficulty and began investigating the possibilities of motor trucks. England offered nothing and they turned to the United States. After a thorough canvass of the truck field the Clydesdale two-ton model, manufactured by the Clyde Cars Co., Clyde, O., was selected for a trial in this service. The Morrisons then submitted their plan to the postal authorities and were awarded the contract to carry the royal mail from Broken Hill to the town of Wilcannia. They made the round trip every two days.

The successful result of the experiment is reported in a letter recently received by A. C. Burch, vice president and sales manager of the Clyde Cars Co. in which Morrison Brothers says: "Your two-ton truck has just completed 12,500 miles, and is running better than the day it was bought. We are able to make the trip exactly on schedule, which is more than can be said of the train and the boat with which we make connections."

BETHLEHEM TRUCK NOTES.

Dimock & Fink, plumber, New York City, state that through the use of Bethlehem trucks, made by the Bethlehem Motors Corporation, Allentown, Pa., it has not only been able to give better service to old customers, but has also obtained many new patrons, and is continually augmenting its fleet of cars. These cars accompany the workmen on all jobs, with ample supplies of tools and materials, and old fashioned, inefficient ideas have been superseded.

The Graham Brothers Sales Co., New York Bethlehem truck distributors, has, through its president and general manager, W. O. Crabtree, purchased the building at West 57th street, 100 by 125 feet, five stories in height, the price being more than \$300,000. This building is located just off Broadway and will afford the larger quarters which the company has needed for some time. When the Graham Brothers Sales Co. secured the Bethlehem agency in the Metropolitan district 1½ years ago, the organization consisted of three men. Today the company itself has 53 men and an associated dealer organization has 52 more.

USED TRUCK CLEARING HOUSE IN NEW YORK.

An enterprise that will be regarded as experimental in its general scope of operations is the Metropolitan Dealers' Motor Truck Exchange, recently organized in New York City with W. H. Moore president, A. C. Harrington vice president, T. D. Pratt of the Motor Truck Association of America secretary and treasurer, W. H. Moore, H. A. Smith, E. N. Stone, C. G. Bond, A. C. Harrington, H. H. Skerrett, W. R. Couch, E. P. Herrmann and W. P. Held directors.

The exchange will primarily be a clearing house for used trucks taken in trade by the members of the organization, and the expectations of the organization is that the membership will eventually include practically all of the dealers in trucks in New York City and the suburban sections. The purpose of the organizers is to stabilize so far as possible transactions where used vehicles are accepted in part payment for new machines.

The plan of the exchange as applied to power trucks is new, but it has been adopted in a general way by other trades with practical success.

TRAILER ASSOCIATION COOPERATES.

Among the important benefits derived through the cooperation of the Trailer Manufacturers' Association of America with other national organizations such as the National Automobile Chamber of Commerce, the Motor & Accessory Manufacturers' association, the Rubber Association of America, the American Automobile association, the National Automobile Dealers' association and the Federal Highway Council, has been the drafting of a model motor vehicle bill to be offered for introduction in the various states with the object of bringing about the greatest possible uniformity of motor vehicle laws throughout the country. With the united support of motor vehicle interests all over the country it would seem that such a bill will have good chances of adoption in many states during the next two years.

E. W. McCULLOUGH, GENERAL MANAGER, N. I. & V. A., RESIGNS.

E. W. McCullough, for a considerable period of time secretary and general manager of the National Implement & Vehicle Association, with headquarters at 72 West Adams street, Chicago, has resigned. His resignation was placed before the executive committee and at a meeting of that body, held Dec. 11, it was accepted.

H. J. Sameit, who has filled a responsible position in the executive force of the association for a number of years, who is familiar with the policies, operating system and methods of the general organization, was appointed acting secretary by the executive committee.

The permanent appointment to fill both offices will be taken up later on. Mr. McCullough has made no statement of his plans for the future.

SPAIN A PROMISING FIELD FOR TRADE EXPLOITATION.

A Spanish commercial expert has stated that that country offers peculiar advantages for the investment of American capital. The prosperity of the country creates a demand for goods of the highest class, and American products are much sought. When import and export restrictions are removed, and transportation facilities become normal, the American exporter will find in Spain a ready sale for most of the merchandise he can spare. The advantages on the side of the American exporter are numerous, although the conditions which obliged the Spanish importer to draw supplies from the United States are rapidly changing, and an attempt will doubtless be made by competitors to resume their former position in this trade.

American goods are well known and liked in Spain. Spaniards are familiar with the articles produced in the United States and are already accustomed to their use. Moreover, it is generally recognized that today the United States is in a better position to fill orders than other countries that heretofore supplied large quantities of merchandise to Spain. With these advantages on their side American exporters should study the needs of this country and adapt their products to Spanish demands. Well equipped agencies should be established, full lines of goods carried, ample advertising matter in Spanish furnished, weight and measures given in the metric system, terms quoted c. i. f. Spanish ports if possible, and reasonable credit allowed. Much can be done by catalogues and correspondence, but a local representative is preferable, and the market is well worth the most intensive cultivation by any exporting house.

What problems are to be overcome in securing the trade with Spain permanently should be studied with care. Many sources of information regarding Spanish conditions are available, among which may be mentioned the Bureau of Foreign and Domestic Commerce, United States Department of Commerce, which has recently sent a commercial attache to Spain with an efficient staff; the American Chamber of Commerce in Barcelona and foreign and domestic banks. American consular officers are located in 20 cities of Spain and are fully informed as to local conditions, as well as desirous of extending American interests abroad.

SULLIVAN JOINS STOCKTON TRACTOR CO.

The Stockton Tractor Co., Stockton, Cal., has appointed Edward F. Sullivan, formerly chief engineer and designer for the Homer Laughlin Engineering Corporation, its chief engineer. He is now developing a track laying attachment for the Stockton wheel driven tractor, as well as a track laying tractor for sugar cane cultivation. The Laughlin tractor is now built by contract at a plant in the East and operation of the Los Angeles plant of the Homer Laughlin Engineering Corporation has been suspended.



Thomas Clements, Vice President, Firestone Tire & Rubber Co., in Charge of Offices and Purchases.



J. W. Thomas, Vice President, Firestone Tire & Rubber Co., in Charge of Manufacturing.



A. G. Partridge, Vice President, Firestone Tire & Rubber Co., in Charge of Sales.

THREE ADDITIONAL EXECUTIVES FOR FIRESTONE CO.

The Firestone Tire & Rubber Co., Akron, O., whose business has expanded to the extent that it is now using 35,000 tons of rubber annually—10 per cent. of the world's production—has announced that three of its efficient executive heads have been added to the board of vice presidents of the company, with added responsibilities. A. G. Partridge becomes vice president in charge of sales, J. W. Thomas vice president in charge of manufacturing and Thomas Clements vice president in charge of offices and purchases.

Mr. Partridge came to the company in its infancy, growing up to general sales manager. Mr. Thomas has been works manager for some time. He has been associated with Firestone for 12 years, having been responsible for production since 1911. Mr. Clements joined the staff about two years ago as comptroller, from the position of general manager of the Woods Motor Vehicle Co.

The directors chosen by the stockholders at their annual meeting were as follows: H. S. Firestone, A. C. Miller, L. E. Sisler, S. G. Carkhuff, J. C. Robertson, J. W. Thomas, Harvey S. Firestone, Jr., A. G. Partridge, C. A. Meyers, T. Clements. The officers re-elected were: President, H. S. Firestone; vice president and general counsel, A. C. Miller; secre-

tary, S. G. Carkhuff; treasurer, J. G. Robertson.

Other promotions just announced by President Firestone were as follows: E. W. BeSaw, who has been western sales manager for three years, with headquarters in Akron, is made general sales manager, succeeding A. G. Partridge; L. G. Fairbank, who has been manager of the eastern division, with headquarters in Akron, becomes vice president and manager of the Firestone Steel Products Co.; F. K. Starbird, district chief, with headquarters at Minneapolis, Minn., becomes western sales manager; J. E. Mayl, district chief, with headquarters at Boston, becomes eastern sales manager.

Mr. BeSaw joined the Firestone forces nine years ago as a salesman in Iowa. In a short time he had become manager of the Des Moines branch and on account of his fine record was called to the general offices, where he soon became manager of the western sales division. Mr. Fairbank became eastern sales manager three years ago after three years in the advertising department, during the latter two of which he was assistant advertising manager. Mr. Starbird became associated with the Firestone organization four years ago in the advertising department. Before becoming a district manager a year ago he was sales manager of the pneumatic sales department. Mr. Mayl started with Firestone in 1911 as a salesman in St. Louis. Four years later he

was placed in charge of the Memphis branch. He was manager of the Cleveland branch from the spring of 1917 until he became a district manager last year.

Reports submitted at the annual meeting showed sales for the fiscal year ending Oct. 31, 1919, amounting to \$91,078,513.70, this being an increase of 20 per cent., or \$15,277,006.91, over the previous year. Profits for the year, after allowances for depreciation and losses on bad accounts, were reported to be \$9,306,978.19; from this amount \$2,597,787.30 was paid during the year as dividends. It was announced that the company will pay an extra dividend of \$2 a share to stockholders of record Dec. 15, and that the directors looked forward to being able to put each quarterly dividend on that basis.

At the same time the directorate announced plans for increasing production facilities, and set a sales goal of \$150,000,000 for the fiscal year ending Oct. 31, 1920. Among the facilities created for bringing about large economies in the cost of manufacturing is the erection of a rubber preparation and refining plant at Singapore, Straits Settlements, in which the crude rubber purchased by the company will be made ready for immediate use upon its arrival at Akron. Methods of financing connecting with the importation of cotton and rubber will be simplified.

FOUNDRY CO. FORMED.

The Automotive Foundry Co. has been incorporated at La Crosse, Wis., with a capital of \$100,000, and will build a foundry, 100 by 150 feet, especially equipped to produce gray-iron castings for the automotive industries. The incorporators are C. R. Pieper, Otto M. Schlabach, Harry Dahl and A. J. Roberge, all of La Crosse, and experienced in the metal working trades. Ground will at once be broken for the new factory.

BELT FACTORY WILL DOUBLE ITS CAPACITY.

The Durkee-Atwood Co., Minneapolis, Minn., is now located in a new plant that will produce at least double the output of the shops formerly operated. The company will make a new fabric fan belt that is claimed to have exceptional qualities, such as non-stretching, not affected by heat and being impervious to water and oil. The belts are stated to be especially suited for truck engines.

NORTHERN FOUNDRY CO. BUSY.

The Northern Foundry Co., Marinette, Wis., which specializes in the manufacture of gray iron castings for the automotive and agricultural implement industries, has been working night shifts to keep up with its orders.

A contract just secured calls for 2000 tons of raw castings for the American Harvester Co., Minneapolis, Minn., deliveries to be made during the next eight months.

BOOTY VACUUM-CONTROL CARBURETOR

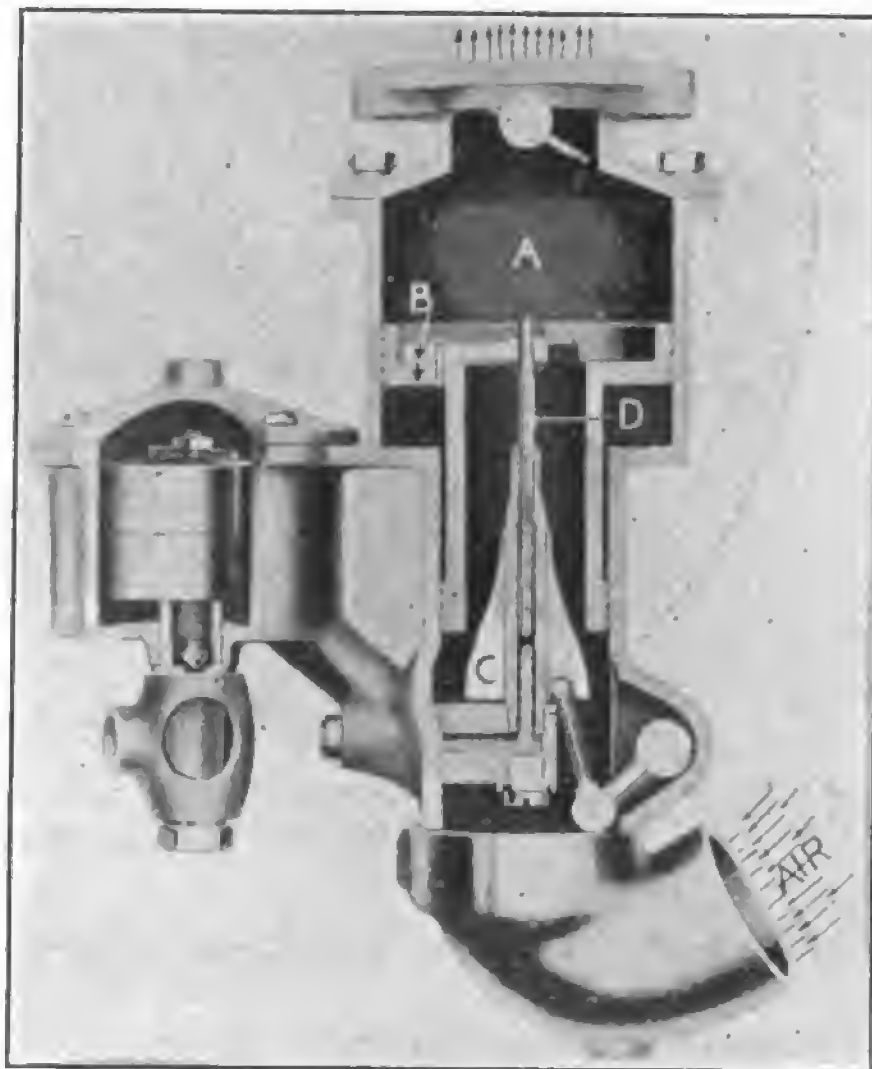
A CARBURETOR that is claimed to be entirely new and original in principle, extremely simple in construction, which is maintained to have exclusive and distinguishing qualities, radically from other carbureting instruments, is the Booty, the details of which have just been made public.

The principle of operation is clearly shown in the accompanying sectional illustration. When the throttle valve is partially open the piston (b) rises and creates an area of opening around the cone (c). This admits the volume of air required by the opening of the throttle, and the grooves in the fuel metering pin (d), which are very shallow at the top and gradually deepen to the bottom, permit the measurement of the ratios of air and fuel required at all loads and speeds of the engine.

Statement is made that the velocity of air through the mixing chamber is constant at all engine speeds and does not vary from the idling to the full load. In this it differs from all other carburetors. The constant velocity of the air is obtained by the movable venturi, which is represented by the bottom of the piston (b) and the contour of the cone (c). The floating piston maintains a constant vacuum in the carburetor, which is very low (approximately one inch mercury column), this giving a very high volumetric efficiency.

Claim is made that water entering the fuel supply pipe with the fuel will not affect the functioning of the carburetor; that water may be poured into the float chamber while the engine is running

without affecting its efficiency. This is explained by the low internal depression and the large orifices in the metering pin through which the water is drawn freely and quickly. This self-scouring quality removes dirt, dust or any foreign substance which would prevent the opera-



Cross Section of the Booty Vacuum-Controlled Carburetor, Showing the Principles of Operation.

tion of other type instruments.

The proportions of air and gasoline vapor required for perfect carburetion is determined by shape of the cone and the depth of the taper grooves in the metering pin, which are very shallow when

the piston is in an idling position, but increase in depth as the pin is raised by the piston. As the piston is lifted the opening around the venturi cone is increased so that the shape of the cone and the graduated depth grooves in the metering pin when calibrated, the one to the other, must supply accurate volumes of gasoline and air.

The design of the Booty carburetor is unusual in that it has but one adjustment and that on the instrument board or steering post, where it can be adjusted by the driver to meet whatever conditions may be experienced. This must not be confused with a primer or choke, as it is a positive adjustment for the fuel. The object of this control is to raise the cone (c), which automatically causes the piston to rise to maintain its fixed and constant vacuum. At the same time the piston (b) is raising the metering pin (d), which increases the depth of the fuel orifices enriching the mixture to whatever degree is desired. Claim is that any desired density of mixture constant throughout the range of the carburetor may be obtained by setting the cone. The rising of the cone will create a rich mixture for starting a cold engine, instead of choking the air by the setting of butterfly valve in air intake.

The manufacturer claims that the Booty carburetor is suited for all makes and types of engines, and that any individual instrument will be equally efficient in use on a car, truck, tractor, aeroplane, marine or stationary engine. All parts are standard and are interchangeable.

NON-FERROUS METAL MERGER.

It is reported from New York City that the American Metal Co. has acquired the entire business of L. Vogelstein & Co., Inc., an independent metal producing and trading corporation. Among the Vogelstein holdings thus taken over is the Copper Refinery at Chrome, N. J., the controlling interest in which was recently purchased from the United States Smelting, Refining & Mining Co.

L. Vogelstein, who recently acquired a substantial interest in the American Metal Co. by the sale of shares by the United States alien property custodian, has been elected a vice president in that company.

FOREIGN TRADE FROM OTTAWA.

Announcements from Ottawa, Canada, state that, according to trade returns recently made public, the exports from that point to the United States during the first three months of the present year declined \$7500 and imports from the United States declined \$23,800,000, compared with the same period of the previous fiscal year.

The exports from Ottawa to the United Kingdom for the same period declined \$36,000,000, while the imports increased \$11,500,000.

KIDD-LEBON SELLS REPUBLICS.

The Kidd-Lebon Co., distributor at Boston of Republic trucks, made by the Republic Motor Truck Co., Inc., Alma, Mich., is to move into the building just completed at 983 Commonwealth avenue, where it will have ample space, also for a service station on the upper floor.

This building is of reinforced concrete, fireproof and the exterior is of tapestry brick. It has a frontage of 100 feet on Commonwealth avenue, and a depth of 175 feet, providing 17,500 square feet on each of its two floors. The Kidd-Lebon Co. will occupy one-half of the first floor for a sales room, while the balance of this floor has been sublet to the A. T. Hart Co., distributor of the National car.

The heads of the Kidd-Lebon Co. are Marshall E. Lebon and Alfred V. Kidd, both of whom have been identified with the trade for a number of years.

MINSTREL SHOW REPEATED.

The minstrel show and mock trial, given by the Chicago accessory manufacturers, which made such a hit during the recent convention of the Automotive Equipment association, was, upon urgent request, repeated for the benefit of the Automobile Accessory branch of the National Hardware association during its meeting in Chicago.

MURRAY CO. LIKES TRAILERS.

The J. W. Murray Manufacturing Co., Detroit, made its initial purchase of trailers of the Fruehauf Trailer Co. of Detroit about a year ago, and it proved so satisfactory in service and accomplished such a remarkable saving in delivery costs that it has steadily increased its fleet until now it has seven in commission and two additional have just been ordered.

The Murray company has found it possible with this fleet of trailers to obviate the delays and lack of dependability experienced with railroad transportation, and a handsome saving is also made.

MUST CONSERVE NATURAL GAS.

At the opening session of the conference of state governors, public utility commissioners, geologists, gas appliance manufacturers and operators at the Department of the Interior, Washington, D. C., Secretary Lane warned producers and consumers of natural gas that they should do everything possible to conserve this natural resource. According to figures submitted to the conference by George Otis Smith, director of Geological Survey, more than a billion feet of natural gas are wasted each day in the United States.

ADVERTISING MANAGERS CONFER

ONE of the events organized by the National Automobile Chamber of Commerce in connection with the activities of the automotive show week in New York City, was a convention of advertising managers, held Jan. 8, at the offices of the chamber at 7 East 42nd street. The meetings were afternoon and evening and in all about 75 different concerns, equally divided between truck and car manufacturers, were represented by about 100 individuals.

The morning session was given over to the presentation of the following papers: "Getting Proper Distribution of Our Advertising Literature by Our Dealers," by Gordon Muir of the Maxwell Motor Sales Corporation, Detroit; "Study of Advertising Arrangements Indicating Most Efficient Way to Cooperate with Dealers in Their Local Newspaper Advertising," by A. C. Chambers of the Elgin Motor Car Corporation, Chicago; "What Is the Best Method of Crediting Dealers' Advertising Allowance on Their Local Advertising and What Is Fair Proportion of Expense for the Dealer to Carry?" by Ward M. Canady of Willys-Overland, Inc., Toledo.

In the afternoon the subjects were "How Can We Better the Advertising of Motor Trucks," by S. R. Swiss of Repub-

lic Motor Truck Co., Alma, Mich.; "On What Basis Should Advertising Space Be Divided Between Newspapers and Other Advertising?" by J. M. Dunlap of Chandler Motor Car Co., Cleveland; "How to Substitute Constructive Publicity for Write-Ups," by J. H. Newmark, Chevrolet Motor Co., New York City.

Other topics for general discussion were the following: "What Are the Features That Make Advertising Copy Most Effective?" "Should We Occasionally Use Advertising Space to Educate Owners to Properly Care for Their Cars and Guarding Against Their Being Stolen?" "Should Cars Over \$3000 Be Advertised to Farmers?" "How Should Outdoors Advertising Be Handled?" "Are Car and Truck Manufacturers Advertising More to One Another Than to the Public?"

The following were the representatives of truck manufacturers: W. E. Blodgett, Autocar Co., Philadelphia, Pa.; George D. Wilcox, H. C. Bradfield, Commerce Motor Car Co., Detroit; Benton Hopkins, Denby Motor Truck Co., Detroit; Walter F. Zimmer, Duplex Truck Co., Lansing, Mich.; L. B. Dudley, Federal Motor Truck Co., Detroit; J. M. Chase, Garford Motor Truck Co., Lima, O.; John E. Baird, General Motors Truck Co., Pontiac, Mich.; D. O. Skinner, H. C. Bailey,

P. L. Luffers and M. C. Horine, International Motor Co., New York, N. Y.; Ralph Kayo, Kissel Motor Car Co., Hartford, Wis.; N. B. Burkness, Kleiber & Co., San Francisco, Cal.; J. A. Kingman, W. D. Horne, C. A. Wales and P. W. Hines, Locomobile Co. of America, Bridgeport, Conn.; A. J. Sanderson, Mac-car Truck Co., Scranton, Pa.; E. J. Travers, Nash Motors Co., Inc., Kenosha, Wis.; D. B. McCay, Olds Motor Works, Lansing, Mich.; C. J. Welch, Oneida Motor Truck Co., Green Bay, Wis.; W. H. Holmes, Packard Motor Car Co., Detroit; H. C. Dart, Paige-Detroit Motor Car Co., Detroit; E. H. Rounds, Pierce-Arrow Motor Car Co., Buffalo, N. Y.; Walter K. Towers, Reo Motor Car Co., Lansing, Mich.; S. R. Swiss, Republic Motor Truck Co., Alma, Mich.; Albert Staab, G. S. Schacht Motor Truck Co., Cincinnati, O.; H. T. Boulden and J. E. Pickens, Selden Truck Corporation, Rochester, N. Y.; Rolfe C. Spinning, Service Motor Truck Co., Wabash, Ind.; Burt R. Barr, Stewart Motor Corporation, Buffalo, N. Y.; H. T. Wheelock, Velle Motors Corporation, Moline, Ill.; Charles A. Ward and Hugh L. Forman, Ward Motor Vehicle Co., Mt. Vernon, N. Y.; Millard H. Newton, J. Walter Spaulding and John C. Barke, White Co., Cleveland, O.

MID-WINTER TRUCK TOUR.

Up to the first of the year the entries for the mid-winter demonstration tour to be conducted by the motor truck division of the Milwaukee Automobile Dealers, Inc., had reached over 30 motor trucks. This tour is to be held as a corollary to the 12th annual Milwaukee motor car show, Jan. 19-25, and will cover about 300 miles and extend over three days, ending at the Auditorium in Milwaukee about the time of the formal opening of the show, Jan. 19.

The following itinerary has been arranged: First day, Jan. 17, Milwaukee to Sheboygan, with Port Washington as the noon control; second day, Jan. 18, Sheboygan to Fond du Lac, with Plymouth as the noon stop; third day, Jan. 19, Fond du Lac to Milwaukee, with West Bend as the noon control. If the cavalcade returns in time the machines participating will be placed on view in the truck section of the show in Machinery hall.

PAID FOR ITSELF IN FIVE MONTHS.

That a motor truck equipped with pneumatic tires will pay for itself in five months has been the experience of John S. Taylor, a fruit grower of Palmetto, Fla. His five $\frac{3}{4}$ -ton trucks on Goodyear pneumatics replaced 20 mule teams and drivers and hauled 240 boxes of grapefruit a distance of 72 miles daily at a cost of three cents a box as compared with 10 cents a mile by mule team. The increased speed of the trucks also enabled the packers to work full time, where previously they had to wait for the mule teams.

ARMY'S MOBILE SHOE REPAIR SHOP.

Two Packard trucks, built by the Packard Motor Car Co., Detroit, and especially equipped for the United States army as mobile shoe repair shops, recently passed through New York on a test trip from Boston to Washington, D. C. The purpose was to show how easily such an outfit can be moved from place to place, what speed can be maintained and how it will stand up under a 500-mile road test.

The first truck carries all the necessary machinery for remaking and repairing shoes, which is driven by a separate motor connected with the driving shaft of the Goodyear stitching machine, the nailer, the scouring and finishing wheels. This motor also furnishes electric lights through a dynamo, and heating facilities are provided through registers connected with the exhaust.

The second truck is equipped as a supply depot, and carries all the materials for repairing soldier's shoes, such as sole leather, heel lifts, hob nails, tacks, welting and other necessary findings as well as extra machine parts for both the trucks and machinery. This supply truck can also be used to dispatch repaired shoes to various points along the lines where troops are located.

Army officials estimate that approximately 800 pairs of shoes a day can be tapped when the mobile outfit is running with a day and night crew of seven men.

There is also carried a complete set of apparatus to pull the trucks out of snow drifts or mud, consisting of ground anchor, winches, ropes, chains, picks and

shovels. The trucks and crew are in charge of First Lieutenant Philip P. Maloney of the Quartermaster Corps of Washington, and six other army men make up the crew. The trucks were equipped by the United Shoe Machinery Corporation of Boston.

GARFORD DOUBLES CAPITAL.

E. A. Williams, Jr., president of the Garford Motor Truck Co., Lima, O., has announced that the capital of that company has been increased from \$5,000,000 to \$10,000,000, to provide for an extensive programme of expansion. One of the first steps in this direction will be the erection of a modern addition to its plant, 400 by 100 feet, which will be entirely devoted to the progressive assembly of Garford trucks.

To provide for still further expansion the company has purchased property adjoining its factories at Lima, which will be utilized in the near future. The foreign demand for Garford trucks is reported as also reaching large proportions.

TRADE CHANCES IN URUGUAY.

The United States Department of Agriculture announces that concerns in the United States wishing to sell in Uruguay, South America, plants, seeds, farm machinery or other articles or stock needed on farms, may distribute catalogues and other advertising matter through departments established by the Uruguayan government for the development of agricultural, dairying and stock raising industries in that country.

(Continued from Page 9.)

wheel axle. This chassis is equipped with a lighting and starting system when desired, Distel wheels and pneumatic tires.

The feature of the Packard exhibit was a three-ton chassis, with an engine of the same power as is installed in Packard five-ton chassis, which is intended to drive the machine on pneumatic tires at 25 miles an hour. Because of the speed of the machine the Babcock vestibule all-steel cab is suspended on springs at three points to protect the driver against the shocks from fast driving on rough surfaces. This cab has several compartments for storage of tools, etc., and may be locked.

The new Ward LaFrance five-ton truck chassis shown is constructed to practically the same design as the smaller vehicles built by this concern, but the engine is a slow speed heavy duty type, having maximum power production at 900 revolutions a minute. The engine has cylinder bore of five inches and stroke of $5\frac{1}{2}$ inches, and is expected to drive the truck $15\frac{1}{2}$ miles an hour.

A feature of the exhibit of the H. J. Koehler Motors Corporation was the new $2\frac{1}{2}$ -ton worm shaft and worm wheel driven chassis, which is lubricated by a reservoir system and especial attention has been given to endurance and long service life.

There were two trucks with secondary transmission gearsets that doubles the ordinary number of gear reduction ratios. The one was the five-ton Schacht, the main gearset having four forward speed ratios and reverse, and by a reduction of this series obtaining a similar range, with eight forward ratios and two in reverse. The other was the Sterling five-ton chassis, with the jackshaft constructed so as to make a reduction from the main gearset, so there is a range of six forward ratios and two reverse. The entire unit is enclosed in the jackshaft housing. Both of these are claimed to be practical for heavy trucks and to have especial value where the work is heavy or the road surfaces soft or rough.

Of the series of 10 machines built by the Winther Motor Truck Co., Kenosha, Wis., six of which are internal gear driven and four four-wheel driven, the latest model is a $3\frac{1}{2}$ -ton internal gear drive truck with electric lighting, designed for a maximum speed of 25 miles an hour on pneumatic tires. In these trucks was a new Wisconsin engine with detachable head. Claim is made that the front and rear axles of the four-wheel trucks are interchangeable, and there is an automatic differential gearset that releases when steering through it.

New Oneida Electric Truck.

The series of Oneida trucks, made by the Oneida Motor Truck Co., Green Bay, Wis., are rated at $1\frac{1}{4}$, $1\frac{3}{4}$, $3\frac{1}{2}$ and five tons capacity, all worm driven, and claim is made that the design has recently been perfected. The company exhibited for the first time its two-ton electric truck, driven by a single motor with but two gears that transmit power to the rear wheels. The reduction gearset is patented.

The Bethlehem Motors Corporation

displayed in its series a new 1500-pound truck, driven by bevel gear, that is equipped with electric lighting and starting system. The Garford Motor Truck Co.'s exhibit included the $1\frac{1}{4}$ and $3\frac{1}{2}$ -ton trucks, both of which are comparatively recent productions, and the Stewart Motor Corporation showed the one-ton internal gear driven truck that was first produced several months ago.

One of the main Selden truck exhibits was the five-ton chassis that is not as yet in production, which includes a Continental engine with $4\frac{1}{4}$ -inch cylinder bore and stroke of six inches, developing 51 horsepower. The full series of Selden trucks is constructed with flexible frames, this being one of the features of design determined from building trucks for army service.

The new one-ton chassis of the Maccar Truck Co., Scranton, Pa., was shown for the first time. This machine includes the demountable power plant, which is exclusive with Maccar trucks. The exhibit of the Republic Motor Truck Co. included the four sizes of chassis built, some of these being equipped for special work, the units including an orchard sprayer, a lumber body, a dump body with a Young horizontal hoist and a chemical fire wagon.

A $1\frac{1}{2}$ -ton chassis that is new was shown by the Vellie Motors Corporation, this being driven by internal gear, constructed with a flexible frame. Two new chassis of $1\frac{1}{2}$ and two-ton capacities were exhibited by the Diamond T Motor Truck Co., and a special five-ton chassis with long wheelbase and large transmission gearset. The company is now using Cotta transmission gearsets in all its machines.

The Clydesdale Motor Truck exhibited for the first time its new one and $1\frac{1}{2}$ -ton trucks, these being recent productions, and showed a special type $2\frac{1}{2}$ -ton chassis that is designed for pneumatic tire equipment and faster speed than the standard machines of this rating.

There was much interest manifested in the bodies, many of which were special type, designed for specific work. Others were stock productions adapted for general purposes. There were but few convertible bodies, such as would be especially useful for farm service, and several examples of design in fire apparatus, hearses, ambulances and municipal service equipment. There were shown 31 stake platform bodies, 28 dump bodies with power hoists, 26 open and express bodies, 23 panel enclosed bodies, 14 rack platform bodies, seven express bodies with standing tops and six omnibus bodies.

The exhibits of accessories, parts, construction units, etc., were interesting and comprehensive.

TWO SECTIONS, PORTLAND SHOW.

The Portland Dealers' Motor Car association will hold its annual automobile show in two sections, both simultaneously, Feb. 23-28. The passenger car division will be held in the Hippodrome building and the trucks in the Armory. M. O. Wilkins is manager of both exhibitions.

FIGURES OF REPUBLIC'S EFFICIENCY.

Last August Wayne A. Robinson, a farmer living near Marshalltown, Ia., bought a model 11 Republic truck, made by the Republic Motor Truck Co., Inc., Alma, Mich., and has kept records since he put it in service from which the following has been compiled:

The truck has been driven more than 2500 miles and the gasoline consumption has averaged as high as 15 miles to the gallon and never less than nine. The average daily cost for gasoline and oil has been \$2.75. The only repair item was one new fan bolt. Comparisons of the work of the truck with a team of horses is overwhelmingly in favor of motor transportation. Mr. Robinson reports that he hauls eight loads a day from his farm to the elevator with the truck, as against two with the team. The average load of the truck is 80 bushels of shelled corn as against 60 with the horse team. This gives the truck credit for doing five times as much work a day than the team. This nets him a saving of \$23 a day. At the present rate he estimates that the truck will be fully paid for in two years.

Mr. Robinson owns a passenger car and tractor in addition to the Republic truck.

TOOL COMPANIES MERGE AT PHILADELPHIA.

The Carlson-Wenstrom Co. and the Carwen Steel Tool Co. have been purchased by A. H. & F. H. Lippincott and the business of the three concerns will be continued by the Lippincott-Carwen Corporation, the officers of which are A. H. Lippincott, president; F. H. Lippincott, vice president, and A. A. Cavanaugh, secretary. The Lippincotts manufactured screw machine products, which will be continued, and the company will manufacture Carwen balancing machines and various classes of special machinery. Jacob Lundgren will be the engineer of the new concern and Joseph A. Gangster will be a director and manager of the works.

FALLS MOTORS INCREASES CAPITAL.

The authorized capital of the Falls Motors Corporation, Sheboygan, Wis., has been increased from \$2,500,000 to \$4,000,000. This concern is incorporated under the laws of Virginia and is the outgrowth of the Falls Machine Co. Although it has greatly increased its producing capacity during the last two years, it is at this time contemplating a further enlargement of its foundry and machine shops. It produces high speed gas engines for passenger cars, trucks and tractors.

DISBROW DESIGNS ENGINE.

Louis Disbrow, the well known racing pilot and designer, spent several weeks in Waukesha, Wis., at the plant of the Waukesha Motor Co., designing and supervising the construction of a new engine.

TIMKEN PLANS FOR 1921.

When it was announced a few weeks ago that the Timken-Detroit Axle Co., Canton, O., was increasing its capital, it became rumored that the company proposed a consolidation with other interests, but it is stated by the officials of the company that any such report is erroneous. The increase in capital was authorized for the purpose of providing sufficient capital to take care of the rapidly growing demand for Timken-Detroit axles. Of the capital authorized, \$5,000,000 of the preferred stock has already been sold, and over \$2,000,000 of the cash thus obtained has been invested in plants and equipment.

At the recent annual meeting the following officers were elected: Board of directors, H. H. Timken, chairman; W. R. Timken, A. R. Demory, H. W. Alden, Fred Glover, Heman Ely, Austin Lynch; president, A. R. Demory; first vice president, H. W. Alden; second vice president and general manager, Fred Glover; third vice president and secretary, C. W. Dickerson; treasurer and assistant secretary, C. G. Rowlette; sales manager, P. W. Hood; director of purchases, F. H. Maisenville.

At this meeting plans were inaugurated for expansion on a much larger scale in 1920 to provide for an increase in output in 1921 of at least 50 per cent. The company operates its own malleable foundry, steel foundry, forge plant and gear plants, both bevel and worm, having acquired a number of years ago the exclusive American rights for the well known David Brown type of worm axle. The company was organized in 1909 for the purpose of taking over the axle business of the Timken Roller Bearing Co., which was organized in St. Louis over 20 years ago, beginning with the manufacture of roller bearings and roller bearing axles for horse drawn vehicles, later moving to Canton, O., and engaging in the manufacture of axles for automobiles, as well as the Timken roller bearing axles.

The business has now grown to a point where the Timken-Detroit Axle Co. furnishes these components for over 120 customers for trucks and passenger cars, the schedule for 1920 being 255,000 sets, while plans outlined for 1921 call for 400,000 sets.

It has been the practise of the company to put back into the business each year about 75 per cent. of its earnings, so that the invested capital today is approximately \$18,000,000, represented by the present outstanding \$3,000,000 of common stock and \$5,000,000 preferred. It is planned to pay cash dividends on the invested capital at the rate of approximately six per cent. during 1920.

BALANCED VALVE MOTOR CO.

The Balanced Valve Motor Co. has been formed at Milwaukee, Wis., for the purpose of manufacturing a new type of four-cylinder engine for automobiles, trucks and tractors. Capital, \$3,000,000. Officers: President, W. M. Baumheckel; vice president, E. R. Menz; treasurer, E. W. Eberhardt; secretary, G. E. Pleper.

AMERICAN CARS POPULAR IN AUSTRALASIA.

F. E. Wodell, trade investigator in Australasia for the General Motors Export Co., who has been in New York for his annual visit, in reviewing the motor vehicle situation in that field, stated that he has particularly noted an increase in the popularity of the type of motor car design represented by American practise.

American cars have a high reputation in Australia and New Zealand and this country will continue to dominate the market there, although there will always be a demand for British cars. In August of this year 598 passenger cars, valued at \$664,442, were exported from the United States to Australasia, as well as 44 motor trucks valued at \$64,481.

There has been an embargo on the importation of complete cars, though one body has been permitted entry to every two chassis. All parts of such bodies and all accessories are taxed at various rates, ranging from 10 to 50 per cent. of the value. A considerable body making industry has sprung up in Australia, though the manufacture of complete cars has not been encouraged.

The cost of motoring in Australasia is considerably higher than in the United States. In the first place the initial cost of a car there is about twice what it is in this country, due to packing charges, freight rates and import duties. Then the prices of gasoline and oil are high, the former selling at about 60 cents a gallon and the latter at \$2.40 a gallon.

Much attention is being given, in Australia and New Zealand, to good roads, and this is giving new impetus to motoring everywhere within their borders.

WILL BUILD LARGE SPRING PLANT AT DETROIT.

A tract of 30 acres of land has been acquired by the American Auto Parts Co., a concern recently organized with capital of \$5,000,000 at Detroit, on which a large plant is to be erected. William E. Perrine is president, W. P. Culver, formerly sales manager for the Perfection Spring Co., Cleveland, is vice president and sales manager, and J. W. Stannard is secretary-treasurer.

U. S. TRUCK'S XMAS PARTY.

The accompanying illustration is from a photograph taken at the Christmas party held on Saturday, Dec. 27, at Cincinnati, O., by the employees of the United States Motor Truck Co. The frolic was held under the auspices of the Mutual Benefit association connected with the company, and was attended by over 300 employees and their families.

There was a Christmas tree with gifts on it, a buffet luncheon was served and dancing was enjoyed. In connection with the affair the following unusual offer in the true Rooseveltian spirit was promulgated by R. C. Stewart, president of the company:

1. To any employee of the United States Motor Truck Co. who has a male baby born during the year of 1920, the company will give cash \$50.

2. To any employee who has twins born during the year 1920, of either sex, the company will likewise give the sum of \$100.

3. Should any employee have triplets during the year 1920 the sum of \$400 will be given.

REPUBLIC MOTOR REPORT.

The report of the Republic Motor Truck Co., Alma, Mich., for the fiscal year ending June 30, 1919, shows a surplus, after charges, Federal taxes and preferred dividends of \$495,603, equivalent to \$4.95 a share earned on the 100,000 shares of common stock. This compares with \$6.79 a share the previous year.

The Torbensen Axle Co., a subsidiary of the Republic company, reports a surplus for the year, after charges and taxes of \$256,773, from which preferred dividends amounting to \$51,800 were paid, leaving a balance of \$204,973.

The income account of the Republic Motor Truck Co. shows net sales of \$16,513,377 for the year just ended as against \$20,522,380 the preceding year. Manufacturing costs were \$15,342,909, a decline of \$2,406,640, and net operating profit of \$1,170,468, a falling off of \$1,602,363. Net profit after adjustment of other income and interest charges was \$862,902, against \$1,485,083.



The Members of the Mutual Benefit Association of the United States Motor Truck Co. at a Christmas Party at Cincinnati, O., Dec. 27, Which Was Attended by More Than 500 Persons.

FOREIGN TRADE OPPORTUNITIES

(Reserved addresses may be obtained from the United States Bureau of Foreign and Domestic Commerce, Department of Commerce, and its district and cooperative offices, upon written request by the opportunity number.)

31,652—A fruit grower in South Africa desires to purchase a complete plant for fumigating orange trees from eight to 15 feet high, grading machines and presses for packing oranges, a light tractor for orchard cultivation and flumes for conducting water across a river 200 yards wide. Quotations should be given c. i. f. Algoa Bay. Catalogues, prices and terms are requested. Reference.

31,658—The purchase is desired, by manufacturers in France, of automatic machines for the manufacture of fasteners and eyelets, agricultural tools and implements, and tractors with four driving wheels. Quotations should be given c. i. f. French port. Payment upon delivery of goods. Correspondence should be in French. Reference.

31,678—An importer in Belgium desires to secure automobiles, accessories and tractors. Reference.

31,692—An importer in Italy desires to purchase and secure an agency for the sale of agricultural machinery and implements. Quotations should be given c. i. f. Genoa. Payment on receipt of merchandise at Genoa. Correspondence should be in Italian or French. References.

31,695—A dealer in agricultural instruments in Spain desires to purchase a reaper with five arms which will cut forage and cereals, and a tractor of 10 or 12 horsepower, especially for use in the cultivation of small fields and irrigated lands. Payment, cash against documents. Correspondence should be in Spanish. References.

31,700—A retail dealer in France desires to purchase bicycles and accessories, motorcycles, light motor cars, trucks and accessories. Correspondence may be in English. Reference.

31,708—A firm of American importers established in Siberia are about to ship

from the United States a cargo of small tools and agricultural implements, and would like to secure agencies from manufacturers of such goods.

31,726—A firm in India proposes to start a freight and passenger transportation service and desires to purchase or secure an agency for a large number of motor trucks and automobiles for pleasure cars. Quotations should be given f. o. b. New York. References.

31,760—A machinery distribution company in Denmark desires to purchase all kinds of machinery and supplies for agricultural and dairying uses. Quotations should be given f. o. b. American ports, or c. i. f. Scandinavian ports. Reference.

31,766—A firm in Brazil, having recently added a commission sales department, desires to get in touch with exporters specializing in agricultural and industrial machinery, factory supplies and electrical goods. Reference.

31,770—The purchase of goods for the Armenian government is desired by a man in Russia. He will require harvesting machines, reapers, binders, threshing machines, plows, drills, cultivators and cotton seed oil presses. Quotations, together with insurance and transportation to Armenian port, should be given. References.

31,778—A firm in Spain manufacturing small direct-connected, motor driven pumps and having large facilities for installation and repair work, desires representations of the following lines: Electric generators, electric motors, principally small sizes, wiring devices and an electric automobile. References.

31,781—A firm of commission agents in India desires to secure agencies for the sale of piece goods, hosiery, toilet goods, toys, paints, colors, provisions, grain, motor cars, etc.; also for marine and fire insurance. Quotations should be given c. i. f. India port. References.

31,796—An agency is desired by a firm in Spain for the sale of telephonic and telegraphic apparatus, field glasses for army use, goniometers, automobile trucks, motors, dynamos, cables, electri-

cal instruments and high power search lights suitable for army field operations. Quotations should be given c. i. f. Spanish port. Correspondence may be in English. References.

31,816—An engineer in Turkey desires to secure the representation, consignment and import agency for the sale in Roumania, southern Russia and Turkey, of all articles which will find a ready sale in those markets. He desires to create a general office devoted to commercial, industrial and agricultural interests, with agencies in various centers of the Levant. Correspondence should be in French or German. References.

31,817—A firm in Spain desires to secure agencies on commission for the sale of sulphate of ammonia, cocoanut oil, coal, tin plate, motor trucks, electrical materials, etc. Quotations should be given c. i. f. Spanish port. Correspondence may be in English. Samples are requested. References.

31,819—A manufacturing company in Scotland desires to purchase light engines, and frames and back axles for the construction of light motor cars.

31,825—A commercial representative of firms in Brazil is in the United States and desires to secure an agency for the sale of iron and steel products, agricultural machinery, automobiles, wearing apparel, metals, oils, paper, fish, canned goods, knit goods, leather and wire. Reference.

31,831—The financial agent of an importing company in Bulgaria desires to receive immediate quotations direct from manufacturers or exporters on 50 metric tons of sheet iron up to 1½ millimeters thick; 200 tons of wire; 30 to 40 small steam plows of five to six horsepower, two without wheels; 30 complete threshing machines with five tons of belting; 1000 to 2000 sewing machines; 100 to 200 dozen of tanned skins; 10,000 packages of cotton yarn for weaving, Nos. 6 to 14; 200 bales of unbleached cotton, mark C and triple C; one rotary machine with stereotype, and 200 tons of printing paper, weight 50 grams per square meter.

WILL ERECT GIRLS' DORMITORY.

To help relieve the congested housing conditions in the rapidly growing city of Akron, O., one of the great centers of the rubber industry of the country, the Goodyear Tire & Rubber Co. announces that it will immediately supervise the erection of a girls' dormitory to cost \$200,000. This building is planned to accommodate 175 girls and is designed to make homes for girls who are constantly coming to Akron to take positions with the Goodyear company. It is to be three stories, of brick, to be located in the Goodyear Heights community near the factory. The management of the dormitory will be vested in the social service department of the company of which Miss Clara E. Bingham is manager. The girls accommodated here will pay rent on a basis of the actual cost of maintenance by the company.

HENDERSON DIRECTS MARTIN-PARRY SALES.

The output of the Martin-Parry Corporation, builder of truck bodies, with factories at Indianapolis, Ind., and York, Pa., which is claimed to be the largest industry of the kind in this country, are now marketed by R. P. Henderson, vice president and director of sales, with headquarters at Indianapolis. Mr. Henderson was general sales manager for the Parry Manufacturing Co. for three years and before that was associated with several automotive enterprises.

LANCASTER ADDS TO PLANT.

The Lancaster Body Co., Lancaster, Pa., successor to the Mack Body Co., is to build an addition, 100 by 120 feet, which will give it an entire unit 120 by 200 feet.

FIRST RELIABILITY TOUR.

Announcement is made of the First National Motor Truck Reliability tour sanctioned by the American Automobile association through its contest board. At least six trophies will be competed for, offered through Victor Rosewater, owner and publisher of the Omaha, Neb., Bee, and other citizens of that city. The date and exact route has not yet been decided on. The run will consist of approximately 2500 miles, to be made at an average speed of 100 miles a day, three Sundays being observed as rest days, and the itinerary must be arranged so as to reach cities of sufficient size to care for the participants during these long stops.

Charles P. Root, who has managed a number of successful motor car and truck runs out of Chicago, will be in charge of this tour and the promotional manager is F. Ed. Spooner.

NEW FOUNDRY FOR BURD.

The factory capacity of the Burd High Compression Ring Co., Rockford, Ill., which was greatly increased to obtain maximum production for government requirements during the war, was found insufficient to meet the rapidly increasing demands from the trade for Burd high compression and quick seating piston rings.

The new foundry, recently completed, will more than triple the production capacity of the Burd plant, and this, together with the progressive systems and improved processes that have been installed, give not only a largely increased output, but greater efficiency on the part of the molders.

Burd piston rings are individually cast from a tough gray iron of special analysis, filtered so that all impurities are removed, to insure absolute uniformity of metal texture, greater strength, prompt and perfect seating and freedom from flaws, porous spots and other defects.

U. S. TRUCK PRODUCTION PLANS.

The United States Motor Truck Co., Covington, Ky., has announced plans to provide for an increase in production for 1920 of 200 per cent. or better, new forms of co-operation with dealers, large use of advertising space and new forms of advertising co-operation, and the production in its own factories of a great share of the material used in the trucks. Models for 1920 will range in capacity from 3000 to 12,000 pounds, and will be known as N, 3000 pounds, with Clark Celfor axle; NW, 3000 pounds, with worm drive; R, 5000 pounds, with worm drive; S, 7000 to 8000 pounds, with worm drive, and T, 10,000 to 12,000 pounds, with worm drive.

GOODYEAR EXHIBIT, AT PARIS.

The Goodyear Tire & Rubber Co., Akron, O., planned to have a representative exhibit of its products direct from the factory at the recent automobile show in Paris, France, but through transportation difficulties it failed to arrive on time, whereupon H. M. Parker, assistant manager of the European division of the Goodyear company, borrowed pneumatic, solid and motorcycle tires from the United States Army of Occupation and from one of the French manufacturers, with the result that the Goodyear company had a striking exhibition at the show.

WHITE CO.'S SURPLUS.

For the first six months of 1919 the White Motor Co., Cleveland, O., reports a surplus, after taxes, of \$1,256,167, equal to \$3.92 a share (par \$50) on the \$16,000,000 of stock.

KRIEG RESIGNS FROM PAN MOTORS.

A. Krieg has resigned as chief engineer and general manager of the tractor division of the Pan Motor Co., St. Cloud, Minn.

ANNUAL MEETING DART CO.

The Dart Truck & Tractor Corporation at its recent annual meeting elected the following officers: President, C. C. Wolf; first vice president, W. H. Johnson; second vice president, M. D. Heron; secretary and treasurer, E. L. Stover; board of directors, the above officers and S. Y. Eggert.

The reports submitted showed that 1919 was a very successful business year for the company, and that the outlook for 1920 is even brighter, as orders on the books totaled a greater amount of business than for any other time in the history of the concern, and contemplated enlargements will become imperative.

DEATH OF E. A. SHELLY.

E. A. Shelly, who for some time past has been assistant sales manager of the Selden Truck Corporation, Rochester, N. Y., died at his home in that city on Jan.



E. A. Shelly, Assistant Sales Manager, Selden Truck Corporation.

19 after a brief illness. Prior to becoming associated with the Selden interests he was for a number of years with the Vim Motor Truck Co., Philadelphia. He leaves a wife and one child.

NEW TRADE PUBLICATION.

The Cutler-Hammer Manufacturing Co., manufacturer of electric controlling devices, with factories in New York City and Milwaukee, Wis., has just issued a leaflet entitled "Insuring Full Return on Truck Investments." This brochure describes and illustrates the new C-H automatic sectional type of battery charging equipment for charging battery driven vehicles, trucks and locomotives. A separate section is shown in detail and an installation of a six-section equipment indicates the method of arrangement in complete panels, and its automatic action in caring for the charge, tapering the rate and termination of charge is discussed. The Universal unity type section is also included and typical fleets of electrics charged by C-H apparatus are photographically reproduced.

BIG CONTRACT FOR SELDEN.

Robert H. Salmons, vice president of the Selden Truck Corporation, Syracuse, N. Y., has confirmed the report that that concern has just received a contract for 1400 Selden trucks to be delivered on a monthly schedule, throughout the year 1920. The deal was the result of the efforts of W. F. Reynolds, the company's representative in the foreign field, with headquarters in London, England, and was consummated through Gaston, Williams & Wigmore, European agents. The average price of a Selden truck today is \$3000, which carries the money involved in this contract, which is stated to be the largest single order ever placed for motor trucks for purely commercial uses either in this or any foreign country, to over \$4,000,000.

The Selden company has dealers throughout Scandinavia, France, South Africa, Japan, Central and South America, only recently, in addition to the above order, over 365 trucks were sold to be delivered through its affiliations in Tokio, Japan and Valdivostok, Russia.

LARGEST SHIPMENT OF RUBBER.

What is stated to be the largest single shipment of crude rubber in the world has arrived at Akron, O., from New York, and is being unloaded at the works of the Goodyear Tire & Rubber Co. It consists of 53 cars, each car containing 200 cases of 200 pounds each. There was a total of 39,580 of these cases and the total weight of the shipment was 7,916,000 pounds. The total value is approximately \$4,412,200, and it is sufficient to supply the entire world with rubber for three days. It is equal to the year's production from 1,600,000 trees, or the yield of 16,000 acres of plantation. To unload the train 48 men worked about six days and more than half a million cubic feet of storage space was required to house this huge bulk of raw material.

Although this rubber will be used for various purposes, if devoted to tires alone it would be enough to make 700,000 tires.

WOOD IS WITH TRAFFIC TRUCK.

Wilbur W. Wood, who for many years has been a writer for the St. Louis papers has joined the advertising staff of the Traffic Motor Truck Corporation of that city, and will have charge of both local and national publicity. Mr. Wood will also edit "Horse Sense," the monthly house organ of the Traffic Motor Truck Corporation and the "Weekly Wallop," the internal house organ.

Mr. Wood was, during the war, connected with the Naval Aviation service, and while in France edited the "Paullac Pilot," a weekly publication devoted to this service.

SEATTLE SHOW MARCH 1-8.

The Motor Car Dealers' association will hold its annual automobile show in the State Armory, March 1-8. William J. Coyle will be the manager.

Truck Show Committee of National Automobile Chamber of Commerce



David Ludlum, Autocar Co., Philadelphia, Pa.



Martin L. Pulcher, Federal Motor Truck Co., Detroit, Chairman.



A. J. Whipple, Diamond T Motor Truck Co., Chicago, Ill.

(Continued from Page 10.)

"Effective Advertising."
"The Farm Field."

EVENING.

"Motor Truck and Railroad Freightling."
"Cost and Service Comparisons."
"Economic Range of the Motor Truck."

Tuesday, Jan. 27:

AFTERNOON.

"Selling Motor Transportation."
"Handling Motor Trucks and Passenger Cars Together."
"Offering a Complete Transportation Line."

EVENING.

"The Farmers' Haulage Problems."
"The Horseless Farm."
"Connecting Farms and Markets."
"Farm Power."

Wednesday, Jan. 28:

AFTERNOON.

"Selling on the Firing Line."
"Proven Sales Plans."
"Developing Prospects."
"Promoting Rural Express and Other Enterprises."

EVENING.

"Rural Motor Express."
"Its Opportunities as an Investment and Business Career."
"Its Advantages to the Shipper."
"Its Benefits to the Producer and Consumer."

Thursday, Jan. 29:

AFTERNOON.

"Promotion of Highways and Traffic."
"Taking an Interest in Legislation."
(Sessions under direction of the National Highway Traffic Association.)

EVENING.

"Highways and Motor Transport."
"Relation of Roads to Operating Cost."
"Progress in Highway Improvement."
"Constructing Roads for Motor Truck Traffic."

Friday, Jan. 30:

AFTERNOON.

"In the Matter of Service."
"The Truck Owner's Viewpoint."
"The Truck Dealer's Plan."
"The Manufacturer's Policy."

EVENING.

"Increasing Motor Haulage Efficiency."
"Cost Accounting, Routing and Dispatching."
"Loading and Unloading Devices."
"Incentives for Drivers and Helpers."

Saturday, Jan. 31:

EVENING.

"Aids to Motor Truck Efficiency."
"Trailers."
"Pneumatic Tires."

The sessions of the conference devoted to the papers and discussion will average an hour and a quarter, but in addition to this will be the displays of pictures, which will require not less than 30 minutes. The sessions will take place at the Amphitheater.

Exhibits Will Include 55 Makes of Trucks.

The truck exhibition will include 55 different makes, one of which, the Walker, is electric, and the Oneida series

will also have a new electric type that was shown for the first time at New York. Of the trucks, the All-American, Dependable, Hendrickson, Kalamazoo, Parker, Patriot and Service were not shown at New York.

There will be no displays of Brockway, Commerce, Commercial Truck, Corbitt, Four-Wheel Drive (Webberville, Mich.), Kelly-Springfield, Keystone, Koehler, Rowe, Sanford, Schwartz, Sterling, Triangle, Ward and Ward LaFrance trucks, all of which were seen at the metropolitan exhibition. There will be three exhibits of trailers and semi-trailers and one of truck bodies. This will make a total of 59, which may be increased slightly before the show is opened to the public.

The list of accessory, equipment and special exhibits numbers 55, which will also be increased in all probability.

With knowledge of the conditions that limited the attendance at the New York truck show there is reason to believe that the show committee and the management will undertake special promotion of the transportation conference, and a good deal of publicity of the different subjects to be considered will be disseminated by the daily newspapers.

Exhibitors at the Chicago Show

MOTOR TRUCK DIVISION.

Name	Company	Address
Acason	Acason Motor Truck Co.	Detroit, Mich.
Acme	Acme Motor Truck Co.	Cadillac, Mich.
All-American	All-American Truck Co.	Chicago, Ill.
Ace	American Motor Truck Co.	Newark, O.
Armleder	Armleder Co.	Cincinnati, O.
Atterbury	Atterbury Motor Car Co.	Buffalo, N. Y.
Autocar	Autocar Co.	Ardmore, Pa.
Bethlehem	Bethlehem Motors Corp.	Allentown, Pa.
Clydesdale	Clyde Cars Co.	Clyde, O.
Defiance	Turnbull Motor Truck & Wagon Co.	Defiance, O.
Denby	Denby Motor Truck Co.	Detroit, Mich.
Dependable	Dependable Truck & Tractor	Galesburg, Ill.

ACCESSORIES.

Aluminum Die Castings Co., Cleveland, O.
American Auto. Digest, Cincinnati, O.
American Bosch Magneto Corp., Springfield, Mass.
American Chain Co., Inc., Bridgeport, Conn.
American Machine Co., Newark, Del.
American Taximeter Co., New York.
Ames Co., F. A., Owensboro, Ky.
Apollo Magneto Corp., Kingston, N. Y.
Arrow Grip Mfg. Co., Glens Falls, N. Y.
Automobile Journal Publishing Co., Pawtucket, R. I.

Bendus, J. V., New York.
Buda Co., Harvey, Ill.
Buell Mfg. Co., Chicago, Ill.

Name	Company	Address
Diamond T.....	Diamond T Motor Car Co.....	Chicago, Ill.
Dodge Brothers.....	Dodge Brothers.....	Detroit, Mich.
Dorris.....	Dorris Motor Car Co.....	St. Louis, Mo.
Federal.....	Federal Motor Truck Co.....	Detroit, Mich.
Garford.....	Garford Motor Truck Co.....	Lima, O.
Gary.....	Gary Motor Truck Co.....	Gary, Ind.
Gramm-Bernstein.....	Gramm-Bernstein Motor Truck.....	Lima, O.
Hendrickson.....	Hendrickson Motor Truck Co.....	Chicago, Ill.
Huffman.....	Huffman Bros. Motor Co.....	Elkhart, Ind.
Indiana.....	Indiana Truck Corp.....	Marion, Ind.
International.....	International Harvester Corp.....	Chicago, Ill.
Jackson.....	Jackson Automobile Co.....	Jackson, Mich.
Jumbo.....	Nelson Motor Truck Co.....	Saginaw, Mich.
Kalamazoo.....	Kalamazoo Motors Corp.....	Kalamazoo, Mich.
Kissel.....	Kissel Motor Car Co.....	Hartford, Wis.
Maccar.....	Maccar Truck Co.....	Scranton, Pa.
Master.....	Master Trucks, Inc.....	Chicago, Ill.
Maxwell.....	Maxwell Motor Co.....	Detroit, Mich.
Nash.....	Nash Motors Co.....	Kenosha, Wis.
Obenchain-Boyer.....	Obenchain-Boyer Co.....	Logansport, Ind.
Oldsmobile.....	Olds Motor Works.....	Lansing, Mich.
Oneida.....	Oneida Motor Truck Co.....	Green Bay, Mich.
Packard.....	Packard Motor Car Co.....	Detroit, Mich.
Paige.....	Paige-Detroit Motor Car Co.....	Detroit, Mich.
Parker.....	Parker Motor Truck Co.....	Milwaukee, Wis.
Patriot.....	Hebb Motors Co.....	Lincoln, Neb.
Pierce-Arrow.....	Pierce-Arrow Motor Car Co.....	Buffalo, N. Y.
Reo.....	Reo Motor Car Co.....	Lansing, Mich.
Republic.....	Republic Motor Truck Co.....	Alma, Mich.
Sandow.....	Sandow Motor Truck Co.....	Chicago, Ill.
Schacht.....	G. A. Schacht Motor Truck Co.....	Cincinnati, O.
Selden.....	Selden Motor Vehicle Co.....	Rochester, N. Y.
Service.....	Service Motor Truck Co.....	Wabash, Ind.
Standard.....	Standard Motor Truck Co.....	Detroit, Mich.
Stewart.....	Stewart Motor Corp.....	Buffalo, N. Y.
Trailmobile.....	Trailmobile Co.....	Cincinnati, O.
Transport.....	Transport Truck Co.....	Mt. Pleasant, Mich.
Union.....	Union Motor Truck Co.....	Bay City, Mich.
Velie.....	Velie Motors Corp.....	Moline, Ill.
Vim.....	Vim Motor Truck Co.....	Philadelphia, Pa.
Walker.....	Walker Vehicle Co.....	Chicago, Ill.
Walter.....	Walter Motor Truck Co.....	New York City.
Wilson.....	J. C. Wilson Co.....	Detroit, Mich.
Winther.....	Winther Motor Truck Co.....	Kenosha, Wis.
Trailers on Floor with Truck Exhibits.		
Fruehauf.....	Fruehauf Trailer Co.....	Detroit, Mich.
Warner Trailer.....	Warner Mfg. Co.....	Beloit, Wis.
Bodies on Main Floor with Truck Exhibits.		
Martin-Parry Mfg. Co.....		Indianapolis, Ind.

Byrne, Kingston & Co., Kokomo, Ind.

Challoner Co., Oshkosh, Wis.
Chilton Co., Philadelphia, Pa.
Clark Equipment Co., Buchanan, Mich.
Class Journal Co., New York City.
Continental Auto Parts Co., Columbus, Ind.
Continental Motors Corp., Detroit, Mich.
Copp, George W. Co., New York.

Dayton Steel Foundry Co., Dayton, O.
Dixon, Jos., Crucible Co., Jersey City, N. J.
Duplex Engine Governor Co., Brooklyn, N. Y.

Eastern Machine Co., S. Easton, Mass.
Eisemann Magneto Co., Brooklyn, N. Y.
Empire Axle Co., Dunkirk, N. Y.
Ericsson Mfg. Co., Buffalo, N. Y.
Essenkay Products Co., Chicago, Ill.

Flint Motor Axle Co., Flint, Mich.
Franklin Mach. & Tool Co., Springfield, Mass.

Gray & Davis, Inc., Boston, Mass.

Hercules Motor Mfg. Co., Canton, O.
Hero Mfg. Co., Philadelphia, Pa.
Horizontal Hydraulic Hoist Co., Milwaukee, Wis.
Hudson Motor Specialties Co., Philadelphia, Pa.

Jaxon Steel Products Co., Jackson, Mich.

Lauraine Magneto Co., New York City.

Mead-Morrison Mfg. Co., E. Boston, Mass.
Merchant & Evans Co., Philadelphia, Pa.

Pantasote Co., New York City.
Parker Axle & Prod. Corp., New York City.
Parry Mfg. Co., Indianapolis, Ind.

Russel Motor Axle Co., Detroit, Mich.

Schrader's, A. Son, Inc., Brooklyn, N. Y.
Sewell Cushion Wheel Co., Detroit, Mich.
Splitdorf Electrical Co., Newark, N. J.
Standard Steel Castings Co., Cleveland, O.
Stromberg Motor Devices Co., Chicago, Ill.

Torbensen Axle Co., Cleveland, O.

Vaporizer Utilities Sales Corp., N. Y. City.

Waukesha Motor Co., Waukesha, Wis.
Wellman-Seaver-Morgan Co., Akron, O.
West Steel Casting Co., Cleveland, O.
Wheeler-Schebler Carburetor Co., Indianapolis, Ind.

SALES MANAGERS IN CONFERENCE.

Forty district sales managers of the United States Motor Truck Co. attended the annual sales conference of that company at the factory in Covington, Ky., Dec. 17-20. The sessions closed with a banquet at Hotel Gibson, Cincinnati, at which Forrest J. Alvin, general manager of the company, acted as toastmaster. One of the principal addresses was made by R. C. Stewart, president of the company.

The United States Truck Co.'s programme for 1920 is an ambitious one, providing as it does for an increase of 200 per cent. or better in production, new forms of sales cooperation with dealers, large use of advertising space in publications and other new and varied forms of publicity, and the production in the company's plant of much of the material and components that enter into United States trucks.

Those in attendance included besides President Stewart, Vice President R. S. Stewart, General Manager F. J. Alvin, and all of the executives and department heads of the company, as well as the entire force of district sales managers, except those in the Far West.

FRUEHAUF TRAILER COMES TO RESCUE.

The J. C. Widman Co., maker of automobile bodies at Detroit, Mich., is making deliveries on large contract with the Ford Motor Co. The contract stipulates that a certain number of bodies must be delivered each day.

The Widman Co. was producing the bodies fast enough, but could not get adequate transportation facilities to deliver them. Various cartage concerns were engaged at a rate of \$1 for each body delivered, but the service was inadequate.

The company finally submitted its need to the Fruehauf Trailer Co. of Detroit and, acting upon its advice, three especially designed body semi-trailers were utilized. The result is that the bodies are now being delivered as fast as produced and the cost reduced 50 per cent., which the Widman company says amounts to \$40 a day.

ATLAS FORGE CO. ADDS TO FACTORY EQUIPMENT.

Production by the Atlas Drop Forge Co., Lansing, Mich., will be considerably increased by new shop equipment and changes now being made. These include the installation of a 300 horsepower boiler, greater furnace capacity, additional storage space for material, a traveling crane and more hammers. The company's products are used principally by truck and car manufacturers.

patented, so it cannot be utilized by others. The five basic patents, which include more than 450 specifications, covers the method of handling freight, together with the special bodies and the loading and unloading equipment. These patents are held by the parent company, the Motor Terminals Co. of New York and Cleveland.

With reference to the haulage conditions. Cincinnati is located on the bank of the Ohio river and the hauls of freight from the river front are all up hill. Some of the street grades are excessive, and to minimize haulage cost special channels for traffic exist that are known as inclines, on which a considerable part of the highway transportation of the city moves. This statement is made to emphasize that the cost of vehicle transportation in Cincinnati is probably larger than the average unless in such cities as Pittsburgh, Kansas City, Albany, N. Y., Fall River, Mass., Duluth, Minn., and other communities where nearly all of the loads must be hauled on steep ascending grades. The expense for fuel and for tires will average more than in cities like Chicago, Detroit, Philadelphia, Baltimore and Buffalo, despite rough streets.

The Cincinnati Motor Terminals Co. has realized a very satisfactory mileage from tires, the guarantee being usually exceeded, and this is believed to be due to the fact that its trucks are equipped with Dayton steel wheels, which have endured in the heavy traffic and maintain alignment, a matter of material importance with reference to cost.

NEXT LOUISIANA-MISSISSIPPI CONVENTION.

The next convention of the Louisiana-Mississippi Automotive Trade association will be held at Lake Charles, La., March 17 and 18. The programme will feature the names of some of the biggest men in the industry not only from the two states, but from the entire country, and there will be round table discussions on pertinent matters ranging from the spark plug to the biggest truck.

DUNLOP TIRE RETURNS TO AMERICA.

Thirty years ago the first pneumatic tire ever put to practical use, the original Dunlop, from which it is claimed has grown the gigantic tire industry of today, was brought to the United States by the late Harvey du Cros, president and founder of the Dunlop Co. The American Dunlop Tire Co., founded by the original company to exploit the pneumatic tire in the United States, manufactured Dunlop tires here for many years and was merged into a large consolidation after the parent company sold its interests some 20 odd years ago. The original British company, with its subsidiary and allied companies, continued to develop the Dunlop tire throughout the rest of the world with such success that today it is said to be the largest tire organization in the world outside the United States, having tire plants in England, France, Japan, Canada and Australia, rubber plantations in the Malay peninsula and Ceylon, comprising 60,000 acres, and cotton mills in Rochdale, England, with 350,000 spindles, having the largest production in Europe.

To provide for the erection of a plant in this country, a commission composed of some of the principal executive members of the English company, accompanied by a staff of experts, arrived here the end of November, and as a result of its survey of the field the Dunlop America, Ltd., has been formed and will acquire all the rights of the original American Dunlop Tire Co. About 150 acres of land at Buffalo, N. Y., has been purchased upon which will be erected a tire plant of the most modern design and equipment. Cord fabric, which will be exclusively used, will be made from the raw cotton in a specially designed cotton plant, which will be constructed alongside the proposed tire plant, and the output, with the exception of the Dunlop golf ball, will be confined to tires. The pneumatics will all be high grade cord and the solid truck tires will be identical in quality with those which gave such unexcelled service on the British army transport during the war.

Dunlop America, Ltd., will be operated by an American staff of executives, and the board will include some of the chief members of the British company, and will have the benefit of a full interchange of patents and technical processes with the British and other Dunlop companies.

REPUBLIC TRUCK CATALOGUE.

The Republic Motor Truck Co., Inc., Alma, Mich., has just issued its latest catalogue of motor truck bodies. It shows a varied line of standard body equipment and deals fully with the proper method of mounting bodies on Republic chassis. Each body illustration is accompanied by complete specifications as to size, construction and utility. The various types of cabs are also fully described. Blue prints give complete information as to the exact dimensions of each type of body, and the catalogue is as comprehensive as could be desired.

This catalogue deals only with the standard body lines made by the Republic company, and special bodies, such as dumpers, lumber jobs, fire and sprinkler apparatus, are fully covered by another publication issued by the company.

The body business of the Republic Truck Co. increased to such proportions during the year past that it was found necessary to move this department into a separate building where ample space and production facilities are afforded.

ENGLISH RAILROAD STRIKE COMPELS TRUCK RIDING.

The public that has to choose between walking and riding, especially if the distances are considerable, may not always be satisfied with the form of convenience, but there is only one answer—it rides. An evidence of this is the accompanying illustration from a photograph made in London during the great railroad strike that was general all over the United Kingdom, and which resulted in the employees complying with the proposition of the government. In this strike titled personages and the clergy volunteered to do the work of the strikers.

This International truck was one of thousands used in London for carrying workers, it traversing the Great North Road to Finbury square morning and evening, taking on and leaving passengers at points nearest their homes, and being worked through the day for general haulage.

MASSACHUSETTS TRUCK CLUB.

The recently organized Motor Truck Club of Massachusetts, with headquarters at Boston, has elected the following officers: President, James J. Scully; vice president, Cornelius F. Bowen; secretary, Dwight W. Sleeper; treasurer, W. Herbert Griffith; directors, C. Claude Davis, Herbert F. Reinhardt, E. W. Cobb, I. M. Dotter, H. Arthur Hall.

Day Baker and James T. Sullivan were appointed delegates to represent the club at the motor truck conference at New York. The membership of the club has reached 166 and 27 applications were received at the last meeting.



International Truck Used for Carrying Workers in London During the Railroad and General Transportation Strike.

Faith in Fisk— It Pays!



OTHER truck owners
dared not try—

but J. W. Smith & Sons
hailed this beam sixty miles
over the Sierra Nevada
mountains, on Fisk Solids
and made money.

*For “the best that man
can manufacture”—
next time—BUY FISK*

J. W. SMITH & SONS
Trucking & Freighting
Contractors
Redding, Calif.

August 20, 1919

Gentlemen:

Recently we were called upon to bid on
a haul of an angle beam weighing six and one-
quarter tons and a length of 60 feet. This was
quite an undertaking, as it required two trucks
to carry the beam.

The roads in most any direction are nothing
more than hard old mountain roads, made up of twists,
and turns, heavy grades and rocks which tax all the
wearing parts to the utmost. They require the best
in tires that man can manufacture.

J. W. Smith & Sons were the only bidders to
come forward as the other truck owners could not see
how money could be made after giving tires this
abuse.

We hauled this beam for 60 miles on Fisk
Solids and made money.

Yours truly,

(signed) J. W. Smith & Sons
By E. W. Smith

*Extract from a letter by J. W. Smith & Sons of Redding,
Cal., to the Fisk Rubber Company, Chicopee Falls, Mass.*

FISK SOLID TIRES

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

ELECTRIC VEHICLES IN ITALY.

The shortage of gasoline during the war has brought about a considerable use of electric vehicles in Milan, Italy, more particularly for heavy trucking. Although under normal conditions gasoline will not continue at its present price of \$1 a gallon, it will always be high in Italy and that of electricity comparatively low. The cities of the Po valley are all level and the roads in the country are very good.

There is one electric garage in Milan which operates electric busses for all the hotels and also a regular express truck service between Milan and Bergamo. This concern is organizing a 3,000,000 lire corporation to manufacture and operate electric vehicles. It is also connected with the Soc. Generale Italiana Accumulatori Elettrici, which will make the batteries. This company would like to form a combination with some American concern manufacturing electric trucks, and it is probable that considerable business might be done in parts of trucks such as controllers, steel wheels, etc., and even entire trucks minus the batteries.

The address of the above concern can be obtained from the Bureau of Foreign and Domestic Commerce or its district or co-operative offices, by referring to file No. 40,723.

WESTERN FOUNDRY SOLD.

Word is received from Milwaukee, Wis., that the Western Rope & Manufacturing Co., Milwaukee, and Tulsa, Okla., has sold its gray-iron foundry at Cedarburg, Wis., to the Charles H. Stehling Co., 401 Fourth street, Milwaukee, maker of special machinery and equipment. The Cedarburg foundry has been devoted principally to making gas engines for oil well equipment.

CHRISTENSEN'S SALES ENGINEER.

The Christensen Engineering Co., Milwaukee, Wis., has appointed Ashley P. Peck sales engineer and general contract agent. Mr. Peck was formerly connected with the Nash and Mitchell Motors companies. The Christensen Co. manufactures Christensen starters.

Trailer Manufacturers Hold Annual Meeting

At the annual meeting of the Trailer Manufacturers' Association of America, recently held at the new headquarters in the Grand Central Palace, New York City, the following officers were elected:

President, J. H. Fertig; first vice president, H. C. Fruehauf; second vice president, C. H. Martin; secretary-treasurer, J. C. Endebrook; executive committee, W. T. Ferris, J. C. Endebrook, H. C. Fruehauf, W. R. Bonds, C. H. Martin, J. H. Fertig, I. S. Byrum.

Among the matters of business transacted was a vote to apply for membership in the Chamber of Commerce of the United States and the Federal Highway Council; the desirability of standardizing the load rating of semi-trailers and pole trailers was agreed upon, and it was voted desirable to adopt a suitable slogan and emblem, this being set aside for final action at the May meeting.

The programme of papers presented included addresses on "Short Haul and Terminal Transportation" and on patent matters by C. W. Reid of the Federal Highway Council, Washington and R. A. Brannigan of the National Automobile Chamber of Commerce, New York. A paper on advertising, prepared by H. Colin Campbell of the Portland Cement association, was read by Mr. Price of the New York office.

The May meeting of the association will be held in Detroit and the September meeting probably in Cincinnati, O.

Trailer companies represented at this meeting were as follows:

Arcadia Trailer Corporation, Newark, N. Y., by J. H. Fertig; Detroit Trailer Co., Detroit, by W. R. Bonds and Lewis B. Moore; Fruehauf Trailer Co., Detroit, by H. C. Fruehauf and J. D. Rosenbaum; William G. Hesse & Son Manufacturing Co., Leavenworth, Kan., by H. W. Perry; Highway Trailer Co., Edgerton, Wis., by E. L. Moorman and Frank M. Lee; King Trailer Co., Ann Arbor, Mich., by H. F. Wardwell; F. P. Lyons Irons Works, Manchester, N. H., by J. A. Methot; Northway Trailercar Co., East Rochester,

N. Y., by H. B. Wyeth; Ohio Trailer Co., Cleveland, by W. E. Ferris; Shadbolt Manufacturing Co., Brooklyn, N. Y., by W. O. Shadbolt; Trailmobile Co., Cincinnati, by J. C. Endebrook and Henry M. Wood; Warner Manufacturing Co., Beloit, Wis., by Max Herrmann and M. A. Potter.

TEST GAS IN TUNNELS.

One of the problems that has developed in connection with the construction of the proposed vehicular tunnel under the Hudson river between New York and New Jersey, which will be 9000 feet long, with an estimated number of 2000 passenger cars and trucks passing through per hour during the rush periods, is the amount of poisonous gas emitted by this long line of machines. This is now an unknown quantity and must be determined before the construction can be undertaken, so that provisions for proper ventilation may be made.

To carry on experiments with a view to ascertaining the amount of carbon monoxide, which is the deadly gas discharged by automobiles, that is likely to be emitted, the United States Bureau of Mines has just requested an appropriation of \$100,000 from Congress. And at the same time Yale university, New Haven, Conn., will construct an experimental tunnel and cooperatively attempt to determine whether the amount of poisonous gases given off by automobiles would be detrimental to life or seriously endanger it in a long tunnel.

The Bureau of Mines will conduct its experiments at Pittsburgh, Pa.

GOOD ROADS WORK IN OREGON.

The amount of highway work now actually under construction in the State of Oregon totals \$21,000,000, and this has in itself created a big demand for trucks mostly of the 3½-ton size. But the completion of new highways has automatically increased the demand for commercial cars entirely independent of construction work, and the Oregon dealers are behind on orders.

Registration figures compiled to the end of October in that state show that there were at that time 8762 motor trucks as compared to 5343 in 1918, an increase of 63 per cent.

**BUILDING LARGE ADDITION TO
ONEIDA PLANT.**

A unit that will be 250 by 60 feet, of steel, brick and concrete, which will increase the manufacturing space to 200,000 square feet, is being erected at the plant of the Oneida Motor Truck Co.'s works at Green Bay, Wis. When this is completed and equipment installed the company expects to have capacity to produce 2500 trucks chassis and from 200 to 300 Oneida electric tractor trucks a year.

The Toledo Steel Products Co., formerly the Lewis Steel Products Co., is now located in a new factory at Summit street and the Maumee river, where it has much larger production facilities.



The Sales Force of the Selden Truck Corporation, During the Annual Conference Held at the Main Office at Rochester, N. Y.

ROSS STEERING GEARS

Motor Trucks Equipped with
Ross Steering Gears

297

Nearest Competitor
ROSS Nearly 5 Times as Many

65

Next Competitor
ROSS Nearly 6 Times as Many

54

Next Competitor
ROSS Over 8 Times as Many

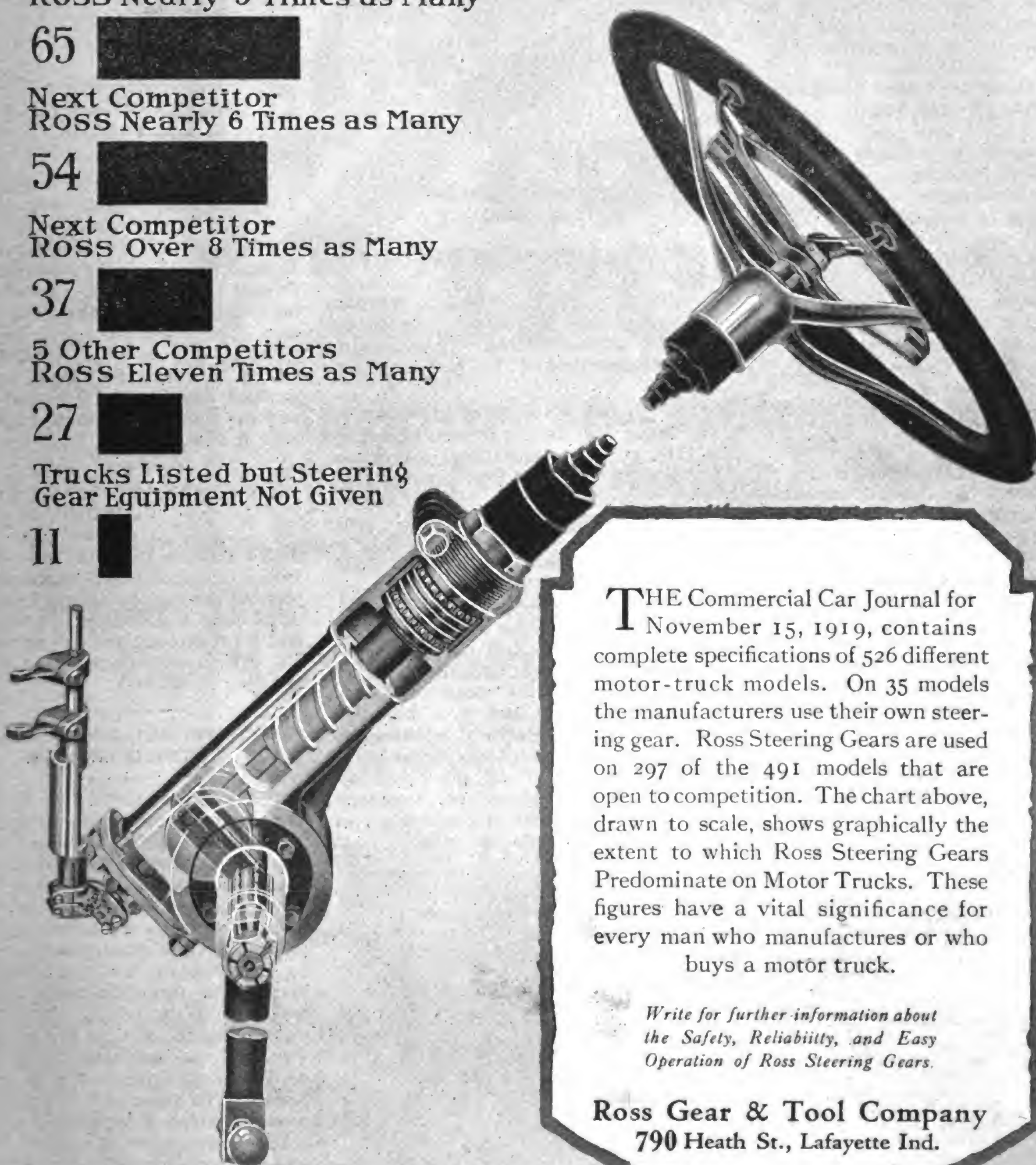
37

5 Other Competitors
ROSS Eleven Times as Many

27

Trucks Listed but Steering
Gear Equipment Not Given

11



THE Commercial Car Journal for November 15, 1919, contains complete specifications of 526 different motor-truck models. On 35 models the manufacturers use their own steering gear. Ross Steering Gears are used on 297 of the 491 models that are open to competition. The chart above, drawn to scale, shows graphically the extent to which Ross Steering Gears Predominate on Motor Trucks. These figures have a vital significance for every man who manufactures or who buys a motor truck.

*Write for further information about
the Safety, Reliability, and Easy
Operation of Ross Steering Gears.*

Ross Gear & Tool Company
790 Heath St., Lafayette Ind.

THE STEERING GEARS THAT PREDOMINATE ON MOTOR TRUCKS

SECOND AERONAUTICAL EXPOSITION.

The Manufacturers' Aircraft association will hold its second annual aeronautical exposition at the 71st Regiment armory, 34th street and Park avenue, New York City, March 6-13, when an opportunity will be afforded to see what American designers have accomplished in the development of commercial airplanes, whether for private use, sporting or touring purposes, or long distance transportation of freight and mail. This exposition will be representative of all the producing airplane factories in the United States, many of them already assembled and in daily service. Some of the larger ones are carrying mail between the principal cities. Others of advanced construction will receive trial flights a few weeks before the show opens.

R. B. FISHER IS BUDA GENERAL SALES MANAGER.

Announcement is made by the Buda Co., builder of Buda engines, at Harvey, Ill., of the appointment of R. B. Fisher as general sales manager, and that he will direct all domestic and foreign sales and the advertising departments.

Mr. John P. Mahoney will continue to serve as sales manager of the engine division and S. Gordon Hyde will remain as advertising manager, but under the supervision of Mr. Fisher.

REPRESENTATION AT TRADE COUNCIL.

James A. Farrell, chairman of the National Foreign Trade Council, announces that 30 foreign nations, representing Central and South America, Canada, Australasia and the Far East, will have trade advisors at the convention of the council to be held in San Francisco, May 12.

OVERSEAS TRAFFIC.

According to a report on overseas traffic for the week ending Jan. 7, made to Director General Hines, 5220 cars of commercial export freight were received at North Atlantic ports during this period, as against 975 for the corresponding period in 1919.

S. A. E. TRUCK AND TRACTOR MEETING AT CHICAGO.

A one-day convention, with morning and afternoon session, to be concluded by a dinner, will take place Jan. 28 at the Hotel LaSalle, at which the principal subjects will be trucks and tractors. One of the papers to be presented will deal with the work of the Ordnance Committee, which was organized at the request of the Ordnance Department, U. S. A. Gen. C. C. Williams, chief of ordnance, will attend the meeting and will speak at the dinner.

Tractor testing from the viewpoint of the user, engineering tests of tractor engines, truck design, the possibility of decreasing unsprung weight of trucks and the construction of trucks to use on pneumatic tires will receive consideration. Several of the engineers of the Motor Transport Corps will take part in the meetings. The dinner will probably be attended by several hundred, most of them visitors to the city.

U. S. TRUCK INCREASES CAPITAL TO \$2,500,000.

At a recent meeting of the stockholders of the United States Motor Truck Co., Cincinnati, O., it was voted to increase the capital from \$1,000,000 to \$2,500,000, and this additional stock was immediately over-subscribed by the present stockholders.

The United States Motor Truck Co. was taken over by its present managers in 1914, at which time it was capitalized for \$300,000. In 1917, on account of its rapid growth, it was found necessary to increase the capital to \$1,000,000.

COMMERCE TRUCK TO DOUBLE PRODUCTION.

The Commerce Motor Car Co., Detroit, has just purchased two more acres of land adjoining its present location, including the plot at the corner of Mackie and Greene streets and, it is reported, that as soon as the present additions to the plant are completed additional buildings will be erected on the newly acquired ground. The Commerce company is planning to double its production of one to two-ton trucks for 1920.

LANSDALE CO. TO HANDLE SERVICE TRUCKS.

The Service Motor Truck Co., Wabash, Ind., is now represented in Pennsylvania and New Jersey by the Lansdale Motor Co., Inc., of Philadelphia, which is erecting at 1409-13 Melon street, in that city, what is designed to be one of the finest motor truck service stations in the country. From 20 to 30 chassis, showing the different models and sizes of the Service truck will be on exhibition and a complete stock of parts to the value of \$50,000 will be carried at all times. The line includes one, 1½, two, 2½, 3½ and five-ton sizes.

The officers of the Lansdale Co. are: President, Eugene J. Logan, formerly with the Fairbanks Co.; vice president, Robert M. Hallowell; treasurer, Joseph A. Willis.

BLOWOUTS DO NOT OVERTURN TRUCKS.

The belief that heavy trucks traveling at a high rate of speed tend to overturn when there is a tire blowout, was disproved recently by one of the transcontinental trucks of the Goodyear Tire & Rubber Co., Akron, O., while accompanying the first California highway motor convoy. The truck was going in excess of 30 miles an hour with a load of approximately four tons and was on an extremely rough detour. The left rear tire burst, but the truck showed no tendency to skid or keel.

MACKEY PLANT READY FOR PRODUCTION.

The Mackey Truck & Tractor Co., Ravenna, O., expects to begin production before the end of January. The company is to build a four-wheel tractor for general farm use and one size of truck chassis. The manufacturing plan has not as yet been stated.

PACKARD BUILDING PNEUMATIC TIRED TRUCKS.

The Packard Motor Car Co., Detroit, has begun production of a series of trucks designed for equipment with pneumatic tires and to be driven at faster speed than the machined fitted with solid tires. These trucks, which are expected to have wide use where haulage must be rapid, are the first of this type produced by this company and the design is distinct from those intended for slower work.

The chassis are built in three different sizes. A recent statement by the company concerning these trucks was as follows: "The pneumatic tire when put on a wheel intended for a solid tire gives a much larger wheel diameter, increasing the gear ratios heavily. The consequence is rapid engine deterioration because the engine is laboring constantly. The problem has been one of design rather than adaption. The pneumatic truck models are specifically designed for the work they do."



Packard Truck Rated at Three Tons Load Capacity, Designed for Pneumatic Tire Equipment, One of a Series of Three Sizes.



EVERY
Acason
IS A
GOOD
TRUCK

**400 Operate in Detroit—5
Years of Substantial Pro-
gress—Repeat Orders High
—Powerful Motor Trucks
Built for Service.**

Serviced and Sold in Principal Cities

1 to 10 Ton Capacities

Some Territory is still open

ACASON MOTOR TRUCK CO.

Exclusively Truck Builders
DETROIT, MICHIGAN

Acason Trucks Will Be Exhibited at the Boston Auto Show.

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

STORM IS WITH SEWELL CUSHION WHEEL CO.

An announcement of particular interest to the motor truck industry is the appointment of Fred J. Storm as assistant general manager of the Sewell



F. J. Storm, Assistant General Manager, Sewell Cushion Wheel Co.

Cushion Wheel Co., Detroit. Mr. Storm has been closely allied with the industry and is well equipped to assume his new duties, which will place him in complete charge of the merchandising of Sewell cushion wheels, recognized as standard truck equipment.

WELEVER PISTON RING CO. INCREASES CAPITAL.

The Welever Piston Ring Co., Toledo, O., has increased its capital from \$20,000 to \$100,000, which increase is to be used principally for expansion of its manufacturing facilities. When the new equipment has been installed the production is expected to be quadrupled, which is believed will be adequate for a considerable period of time.

COMMERCIAL LEASES CHEVROLET PLANT.

The Commercial Auto Body Co., St. Louis, Mo., has leased the truck and automobile body building plant operated by the Chevrolet Motor Co., covering four acres, at Broadway and Bulwer avenue, and will take possession on April 1, when the Chevrolet company expects to be installed in its new plant at Union and Natural Bridge avenues. The old Chevrolet plant has a capacity of 550 bodies a day, and the transfer includes all machinery. It was originally leased by Hugh F. Cartwright, the president of the Commercial company, when he was with the Banner Buggy Co., and when that company began to manufacture the Chevrolet car in St. Louis it was converted to build Chevrolet bodies. It is served by the Terminal Railroad association and the Wabash railroad.

The Commercial Auto Body Co. is now at 16th and Pine streets and in its expansion has acquired nearly every available building in its vicinity, and reports an overwhelming demand for motor vehicle bodies.

ACASON TAKES BIG FLEET ORDER FOR SALVAGE WORK.

What is said to be the largest individual fleet order for trucks ever placed in the South has just been accepted by the Acason Motor Truck Co., Detroit. This is for the Atlantic Salvage Co., a concern that is engaged in purchasing and salvaging southern army camps and equipment from the United States War Department.

The contract was negotiated by J. C. Bonner of the Bonner-Acason Co., Newport News, Va., and the machines will be known as the "Yellow Fleet." It will be composed of Acason trucks of two tons capacity.

BROWNE LEAVES PAN-AMERICAN.

Hiram M. Browne has resigned his position of general works manager of the Pan-American Motors Corporation, Decatur, Ill.

BERLET HEAD OF PHILADELPHIA TRUCK ASSOCIATION.

At the annual meeting of the Philadelphia Motor Truck Association, the dealer organization of that city, E. J. Berlet, president of the Stability Motors Co. of



E. J. Berlet, New President of the Philadelphia Motor Truck Association.

that city, agent for Atterbury trucks, was elected president. Mr. Berlet is known as one of the most active interests in the trade and keenly concerned in the success of the annual truck show in that city, which took place this month. His company has taken a prominent part in various public promotive movements in Philadelphia.

MENOMINEE MOTOR TRUCK CO. RE-ORGANIZED.

The Menominee Motor Truck Co., Menominee, Mich., has been reorganized and these officers elected: President, Antone Kuckuk, Shawano, Wis.; vice president, W. A. Hold, Oconto, Wis.; secretary-treasurer, J. A. Bell, Clintonville, Wis.; directors, the officers and Charles Hagan of Appleton, Wis., and D. J. Rohrer of Clintonville, Wis. The general management will be directed by J. A. Bell, who was assistant general manager for the Four Wheel Drive Auto Co., Clintonville, Wis.

The company is controlled by new men and with additional capital the plan is to produce trucks in considerable volume, continuing the same designs.

NECEDAH MANUFACTURING CO.

The Necedah Manufacturing Co. has been formed at Necedah, Wis., to manufacture automotive equipment of all kinds, its capital being \$100,000. The officers are:

General manager, Fred Lederer, Milwaukee, Wis.; president, C. Fuller; vice president, H. C. Rattunde; secretary, W. H. Eaton; treasurer, C. T. O'Brien.

A plant is to be erected at once to cost \$50,000 fully equipped.

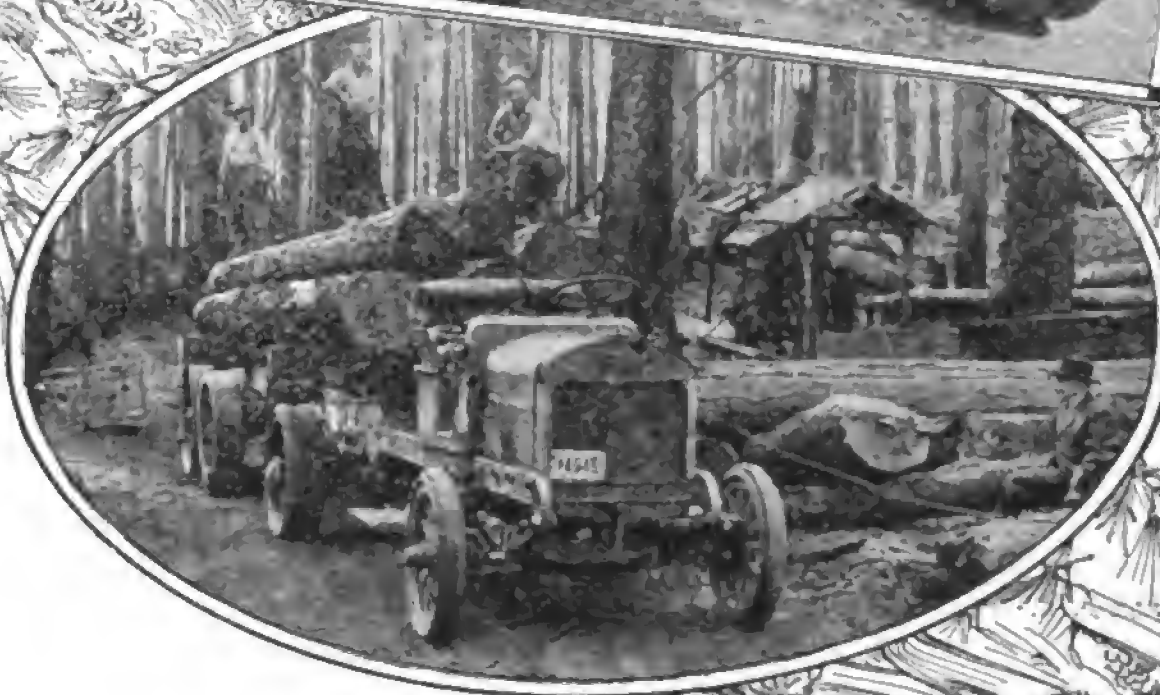
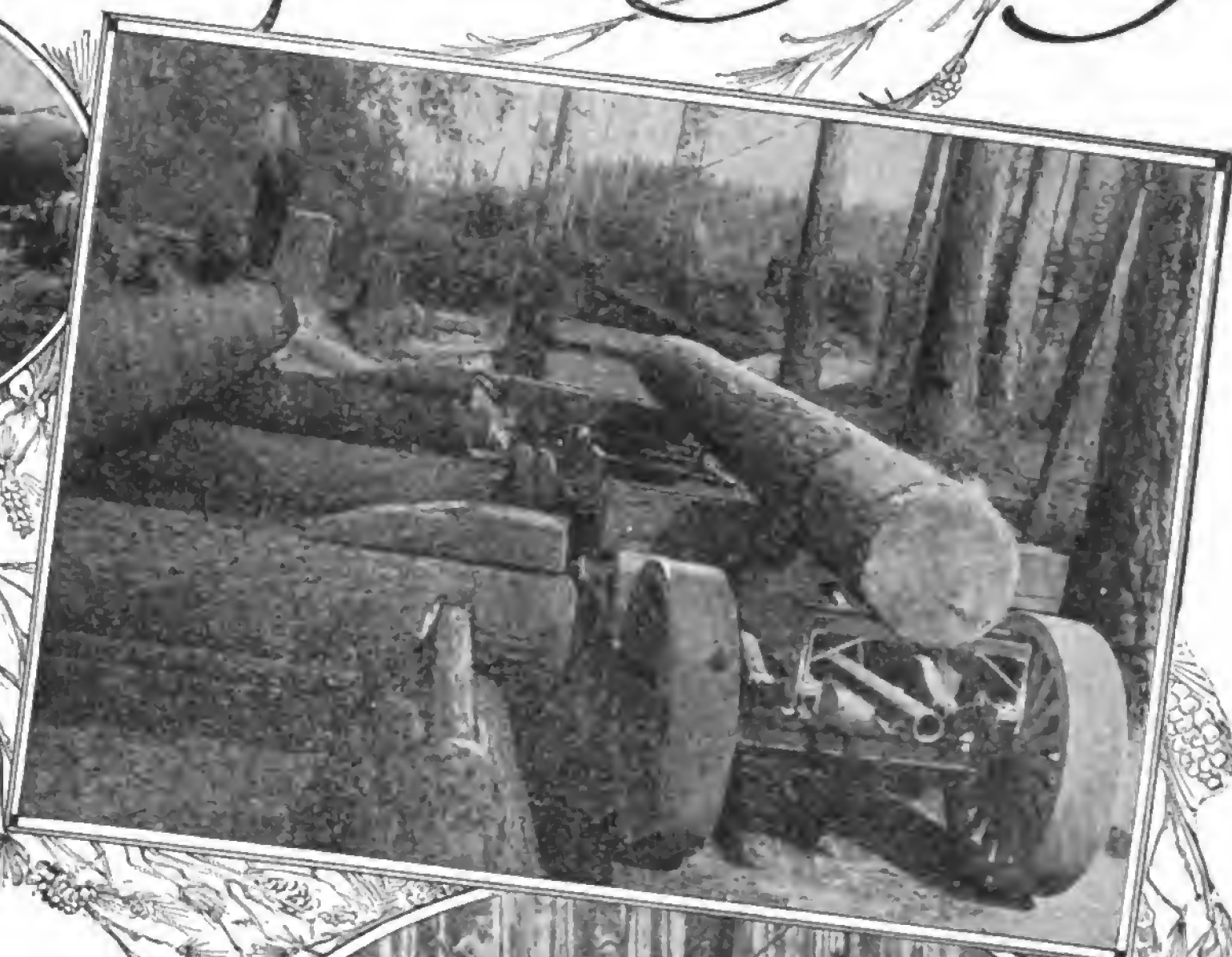


Mack 7 1/2-Ton AC Chassis Equipped with a 2500-Gallon Tank for Oil Delivery, Claimed to Be the Largest Single Tank Vehicle in the World.

EISEMANN

MAGNETO

for Heavy Duty



IN the great forests of the Northwest logging operations are a most severe test to trucks and equipment.

The engineers of the General Motors Company are just as careful in the selection of the Ignition as of every other part that enters into the finished product.

GMC Trucks Have Been Eisemann-Equipped for Six Years

The Eisemann Magneto is sturdy, rugged and powerful—the very perfection of the science of ignition.

THE
EISEMANN
MAGNETO CORPORATION

Plant and General Offices—32 Thirty-third St.,
Brooklyn, N. Y.

CHICAGO—910 S. Michigan Avenue

DETROIT—85 Willis Avenue, West

LONDON, ENG., Stanley J. Watson, 37
Sheen Road, Richmond

SEE US AT THE SHOWS:

Chicago Passenger Car Exhibit, Spaces 8-9-10-11.
Chicago Truck Exhibit, Spaces 32-33.



(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

SHOW AND CONVENTION CALENDAR

Jan. 26-27—Chicago, Ill., Third Annual Members' Meeting, National Automobile Dealers' Association, La Salle Hotel.

Jan. 26-31—Amsterdam, N. Y.; automobile show, benefit of Co. H, N. Y. State Armory, Amsterdam, N. Y.

Jan. 26—Elmira, N. Y., Annual Meeting, Auto Trade Association.

Jan. 27—Atlanta, Ga., Annual Convention, Georgia Automobile Dealers' Association.

Jan. 27—Chicago, Ill., Annual Meeting, Congress Hotel, National Association Automobile Show Managers.

Jan. 27-30—Louisville, Ky.; convention Kentucky Hardware and Implement Dealers' Association.

Jan. 27-30—Portland, Ore.; convention, Oregon Hardware and Implement Dealers' Association.

Jan. 28—Chicago, Ill., Truck and Tractor Meeting, Society Automotive Engineers.

Jan. 28-31—Louisville, Ky.; Kentucky Hardware and Implement Dealers' Association; M. J. Stone, secretary.

Jan. 31-Feb. 7—New Brunswick, N. J., Annual Automobile Show, Armory, W. A. Kuehn, manager.

Jan. 31-Feb. 6—Kansas City, Mo., Motor Car Dealers' Show, Overland building, E. E. Peake, manager.

Jan. 31-Feb. 7—Minneapolis, Minn., Twin City Automobile, Truck, Trailer and Industrial Exposition, Minneapolis Automobile Trade Association, Walter R. Wilmot, manager.

February—Chicago, Ill., International Automobile Manufacturers' Congress.

February—New York City, Marine Motors Meeting, Society Automotive Engineers.

February—Deadwood, S. D.; annual show, Deadwood Business Club; F. R. Baldwin, manager.

February—Montreal, Quebec, Dealers' Show.

February—Manchester, England; North of England motor exhibition.

Feb. 2-7—Kansas City, Automobile Show.

Feb. 2-7—Toledo, O., Car and Truck Show, Terminal Auditorium, Toledo Auto Shows Co.

Feb. 2-7—Rochester, N. Y., Annual Automobile Show, Rochester Automobile Trades' Association, Exposition Park, Benjamin L. Peer, manager.

Feb. 3-7—Wilmington, Del., Automobile Show, Automobile Trade Association, Hotel du Pont ball room, E. C. Ulrich, manager, P. O. Box 713.

Feb. 3-7—Baltimore, Md., Car Show, Fifth Regiment Armory, Baltimore Dealers' Association.

Feb. 7-14—Bridgeton, N. J., Fifth Annual Show, Bridgeton Automobile Dealers' Association.

Feb. 9-11—Wichita, Kan., tractor and farm machinery forum, Wichita Thresher-Tractor Club.

Feb. 9-13—Louisville, Ky.; annual show and convention, American Road Builders' Association; 10th annual good roads congress; 11th annual good roads show.

Feb. 9-13—Charlotte, N. C., Show of the Carolinas, Lee Folger, chairman, show committee.

Feb. 9-14—Nashville, Tenn.; Annual Show, Nashville Auto Trade Association.

Feb. 9-14—Poughkeepsie, N. Y., Annual Automobile Show, Poughkeepsie Auto Club, Armory, George A. Coleman, manager.

Feb. 9-14—Salt Lake City, Utah, Annual Automobile Show, W. D. Riskel, manager.

Feb. 9-14—Cedar Rapids, Ia., Annual Automobile Show, Linn County Sales Bureau, Auditorium, W. J. Hutchins, chairman.

Feb. 9-21—New Haven, Conn., first week, passenger cars; second week, trucks, arena.

Feb. 10—Cleveland, O., Meeting, Automotive Metal Wheel Association, George L. Lavery, secretary, 805 East 70th Street, Detroit, Mich.

Feb. 10-13—Fargo, N. D., Show of Cars,

Trucks and Accessories, Fargo-Moorhead Automotive Trade Association, Barry building, H. L. Wilson, director.

Feb. 10-14—Greenfield, Mass.; automobile show, benefit of Co. A, Massachusetts State Armory, Greenfield, Mass.

Feb. 10-14—Quincy, Ill.; Second Annual Automotive, Truck and Tractor Show.

Feb. 10-15—Quincy, Ill., Annual Automobile Show.

Feb. 11-14—Mason City, Ia., Sixth Annual Car Show, Mason City Auto Show Association, Armory.

Feb. 12—Kansas City, Mo., Tractor Meeting, Society Automotive Engineers.

Feb. 14-21—Brooklyn, N. Y., Ninth Annual Brooklyn Automobile Show, 23rd Regiment Armory, Brooklyn Motor Vehicle Dealers' Association.

Feb. 14-21—Detroit, Mich., Car Show, Detroit Auto Dealers' Association.

Feb. 14-22—San Antonio, Tex., Automobile Show, San Antonio Automobile Trade Association, W. A. Williamson, manager.

Feb. 15-20—St. Louis, Mo., St. Louis Automobile Show.

Feb. 16-20—Manchester, N. H., Automobile Show, Academy (only show in state), J. J. Callahan, manager, box 808, Pittsfield, Mass.

Feb. 16-21—New Haven, Conn., Annual Truck Show, Arena, New Haven Automobile Dealers' Association.

Feb. 16-21—Des Moines, Ia., Annual Automobile Show, Des Moines Automobile Dealers' Association, Ford Factory, Dean Schooler and C. G. Van Vliet, managers.

Feb. 16-21—Kansas City, Mo., Fifth Annual Show, Kansas City Tractor Club, Guy H. Hall, manager.

Feb. 17-21—Kalamazoo, Mich., Car and Truck Show, Kalamazoo Automobile Dealers' Association.

Feb. 21-28—San Francisco, Cal., Fourth Annual Pacific Automobile Show, Motor Car Dealers' Association, Exposition Auditorium, G. A. Wahlgreen, manager.

Feb. 21-28—Ottawa, Canada, Motor Show.

Feb. 22—Los Angeles, Cal., Inaugural Races, Los Angeles Speedway Association, New Speedway at Beverly.

Feb. 23-27—Reading, Pa., Car Show, Reading Automobile Trade Association.

Feb. 23-28—Wichita, Kan., Car Show, Wichita Motor Trade Association, Henry B. Marks, manager.

Feb. 23-28—Elmira, N. Y., Annual Automobile Passenger Car Show, Elmira Automobile Club, State Armory, H. S. Bryan, manager.

Feb. 23-28—Grand Rapids, Mich., Motor Car Show, Automobile Business Association, Furniture Exposition Building, M. D. Elgin, manager.

Feb. 23-28—Automobile show, benefit of Co. F, Massachusetts State Armory, Pittsfield, Mass.

Feb. 23-28—Louisville, Ky.; 12th annual convention, Automobile Dealers' Association, First Regiment Armory.

Feb. 23-28—Portland, Ore., Winter Automobile and Truck Show, Portland Automobile Trade Association, M. O. Wilkins, manager.

Feb. 23-28—Bethlehem, Pa., Sixth Annual Lehigh Valley Show, Coliseum, J. L. Elliott, manager.

Feb. 23-28—Duluth, Minn., Car Show, Automobile Dealers' Trade Association, W. F. Daly, manager.

Feb. 23-28—Springfield, O., Car and Accessories Show, Memorial Hall, Springfield Automobile Trades Association.

Feb. 23-28—Waterbury, Conn., Automobile Show, Auditorium, Guy A. Parsons, manager.

Feb. 23-March 6—Birmingham, England, British Industries Fair.

Feb. 23-March 6—Utrecht, Holland, Fourth Annual Fair of Dutch Products.

Feb. 24-March 1—Kansas City, Mo.; motor car dealers' show, Convention Hall; trucks, passenger cars and accessories.

Feb. 25-28—Grand Island, Neb., Car and Accessory Show, Grand Island Automobile Dealers' Association.

Feb. 27—Waterbury, Conn., Annual Meeting Auto Dealers' Association.

Feb. 28-March 6—Newark, N. J., Newark Automobile Show, First Regiment Armory, Claude E. Holgate, manager.

March—New York City, Airplane Meeting, Society Automotive Engineers.

March—New Orleans, La., Fashion Show.

March—Jersey City, N. J., Automobile Show.

March—Topeka, Kan., Automobile Show, L. W. Earner, secretary, 221 North Kansas Avenue.

March—Adelaide, Australia; all-Australian exhibition of motor vehicles, airplanes, engines and automotive equipment.

March—London, England; motor boat, marine and stationary engine exhibition.

March 1—Fort Smith, Ark., Annual Meeting, Auto Protective Association.

March 1-6—Eighteenth annual automobile show of Buffalo Automobile Dealers' Association, Broadway Auditorium.

March 1-6—Perth Amboy, N. J., 18th Automobile Show, Auditorium.

March 1-6—Scranton, Pa., Car, Truck and Tractor Show, Armory, Scranton Motor Trades Association, Hugh B. Andrews, manager.

March 1-6—St. Joseph, Mo., Annual Automobile Show, St. Joseph Automobile Show Association, Auditorium, John Albus, manager.

March 1-7—Springfield, Mass., Annual Automobile Show, Springfield Automotive Dealers' Association.

March 1-7—Grand Rapids, Mich., Truck Show, Automobile Business Association.

March 1-8—Seattle, Wash., Automobile Show, Motor Car Dealers' Association, State Armory, William J. Coyle, manager.

March 1-13—St. Louis, Mo., First Annual Mississippi Valley Exposition.

March 1-15—Lyons, France, Spring Exposition.

March 2-6—Little Rock, Ark., Show, Passenger Cars, Trucks, ractors, Accessories and Farm Lights, A. W. Parke, manager.

March 2-6—Denver, Col., Automobile Show, Stockyard Stadium, Denver Automobile Trade Association, Harrison Goldsmith, manager.

March 3-6—Lancaster, Pa., Annual Automobile Show.

March 6-13—New York City, Second Annual Aeronautical Exposition, Manufacturers' Aircraft Association, Inc., 71st Armory, 34th street and Park avenue, Walter Hempel, manager.

March 7-13—Muskegon, Mich., Car and Truck, Armory.

March 8-13—Syracuse, N. Y., Annual Automobile Show, Syracuse Automobile Dealers' Association, Howard H. Smith, manager.

March 8-13—Paterson, N. J., Fourth Annual Show, Fifth Regiment Armory, H. MacGinley, manager.

March 10-13—Lebanon, Pa., Annual Motor Show, Automotive Trade Association of Lebanon, James Furniture Store Building, J. Paul Enck, manager.

March 13-20—Boston, Mass.; Boston automobile and truck show, Mechanics' building; Chester I. Campbell, manager.

March 15-20—Wilkes-Barre, Pa., 10th Annual Showing of Passenger Cars, Automobile Dealers' Association of Wilkes-Barre, Inc.

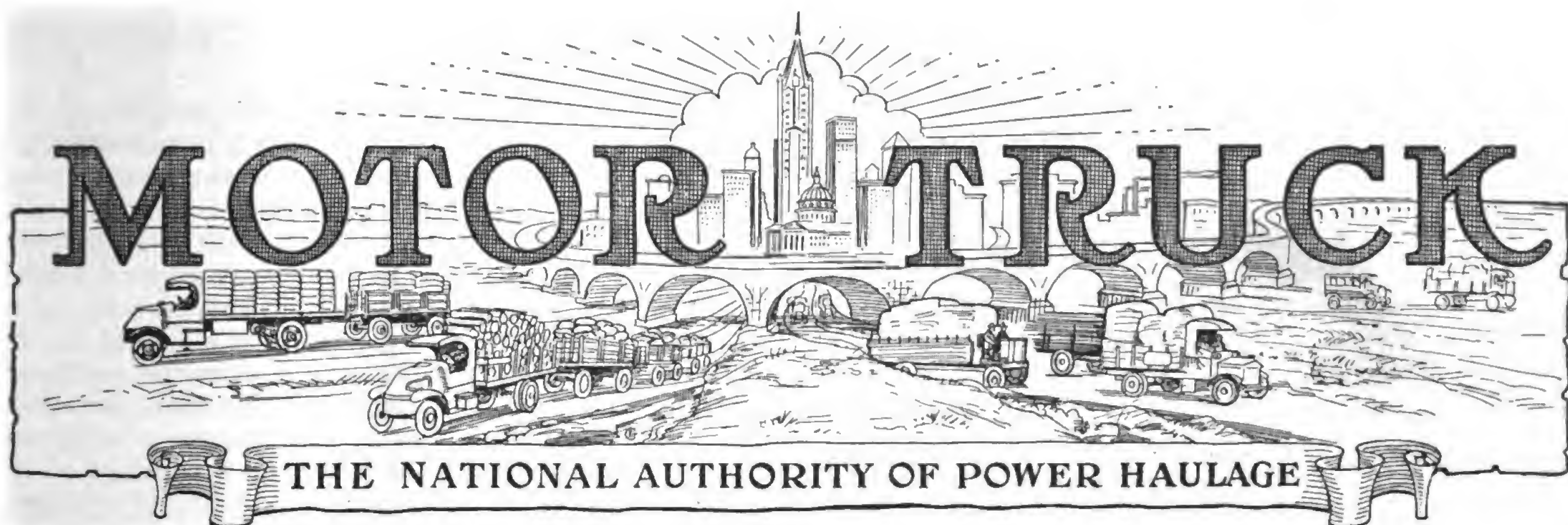
March 15-20—Great Falls, Mont., Fifth Annual Automobile Show and Motor Style Show, Montana Distributors' Association.

March 17-18—Lake Charles, La., Semi-Annual Convention, Louisiana-Mississippi Automotive Trade Association.

March 19-20—Chicago, Ill., Convention, National Association Motor Truck Sales Managers, Congress Hotel.

March 20-27—Trenton, N. J., Annual Automobile Show, Trenton Automobile Dealers' Association, Armory, John L. Brock, manager.

March 20-27—Pittsburgh, Pa., Show for Passenger Cars and Equipment, Automotive Association, Inc., Motor Square Garden, John J. Bell, manager.



VOL. XI. NO. 2.

PAWTUCKET, R. I.

FEBRUARY, 1920.

NEW ENGLAND GREATEST MARKET OF TRUCK INDUSTRY

*More Machines in Use in Ratio to Population
Than in Any Other State or Section—Commer-
cial and Industrial Conditions Especially Favor
Development of Highway Transport Service.*

FOR more than a century and a half New England has been dependent upon its industries and commerce, and as the former increased the latter decreased until these six states, despite the wonderful progress of the Middle States, is literally the bee hive of the nation. Conditions that limited agricultural development have been particularly favorable to industrial progression, and the utilization of water power in thousands of instances for mills and shops caused the foundation of textile and mechanical enterprises that

the potential market is larger because of the peculiar needs of all industries.

New England is served by four railroad systems. A considerable part of the supplies of raw material for the shops and factories is brought by vessel and from the ports are distributed to inland towns and cities, but the remainder is hauled by train, there being a very general movement from West to East and later the manufactured products are distributed by movement from East to West,

TRUCK REGISTRATION OF NEW ENGLAND, DEC. 31, 1919.

Connecticut	22,100
Massachusetts	53,304
Maine	5,792
*New Hampshire.....	3,000
Rhode Island.....	7,152
Vermont	2,400
Total.....	93,748

*Estimated.

CAR REGISTRATION OF NEW ENGLAND, DEC. 31, 1919.

Connecticut	83,500
Massachusetts	234,755
Maine	47,632
*New Hampshire.....	27,000
Rhode Island.....	32,411
Vermont	24,500
Total.....	449,798

*Estimated.

have in many instances become the largest of the kind in the world.

There are in New England today approximately 250 different communities with populations of more than 5000 each, some of which are mainly dependent upon a single industry. There are more than 125,000 different business interests that can be regarded as the market for power vehicles. While the number of freight carrying machines in use is probably larger than in any other state or states of similar population,

FREIGHT MOVEMENT Between the principal IS CONTINUOUS shipping ports and the inland towns and cities there is much freighting, but not in great bulk. There is what may be regarded as a steady movement, that is practically continuous the year through, and in the aggregate the volume is large. The products of these industries are sent to all parts of the nation and some are exported. Practically all the exports are shipped from Boston, New York, Portland and Providence, but the domestic shipments gen-

erally are taken by two railroads.

The railroad facilities that serve New England have not been increased to any material degree in a score of years. Industry has developed amazingly. The only limitations to industrial progression is the housing of the workers, and the demands for homes has impelled many business interests to finance house building, that various industries shall not be retarded in development.

TOWNS AND CITIES IN NEW ENGLAND OF MORE THAN 5000 POPULATION.

Connecticut	50
Massachusetts	122
Maine	25
New Hampshire.....	15
Rhode Island.....	19
Vermont	13
Total.....	244

The business that may be classified as "long hauls" alone is more than the railroads can handle with the present facilities. In fact there is no reason to believe that they will be equal to this class of haulage, and as there has been large increase in the volume of intercity and interstate transportation, that can be classified as "short hauls" for the railroads, and yet not beyond the actual distances that power vehicles can be profitably operated, there is no part of the country where highway transportation service can be so certain of adequate tonnage and remunerative rates as in the New England states.

COMMERCIAL CENTERS CLOSE TOGETHER This is especially true of Massachusetts, Rhode Island and Connecticut, which have close to 6,000,000 population. The towns and cities are very close together, there is practically continuous movement of freight in either direction, and time is a very potent factor in handling raw material and in making delivery of finished products.

The local freight service is extremely slow, and the rates are high, and when to these are added the prices

ESTIMATED POPULATION OF NEW ENGLAND, 1919.

Connecticut	1,244,479
Massachusetts	3,719,156
Maine	772,489
New Hampshire.....	442,506
Rhode Island.....	614,315
Vermont	363,669
Total.....	7,156,614

for haulage to and from terminals, the cost of transportation mounts very rapidly. But in addition to this there is every reason to believe that freight rates will be increased, and as this will further add to the cost of manufacture and to the wholesale and retail prices, one will understand that if industry is governed with reference to production and sales values by railroad freightage, the rates can have a decidedly retarding influence.

SPLENDID HIGHWAYS FOR TRUCK TRAFFIC No section of the country has better highways than New England and no states have so large percentage of the main channels of communication improved. These roads have been built and are maintained for the benefit of the public. If primary usefulness is to be considered it is certain enough that industry and commerce, on which the people depend for existence, should have preference as compared with use for pleasure and recreation, and this being so these roads should be used for freight haulage in whatever volume is essential to the industrial prosperity of the municipalities and states, and this method of transport should be stimulated to meet all needs.

Considering the utility of highways. Railroads and water lines had been the main dependence of the people for transportation until the exigencies of the world's war demonstrated the possibilities of power vehicles. Service for a sufficient period to insure definite knowledge of practicalities with all kinds of freighting has established that a very large part of the "short haul" tonnage of the railroads, which is the least profitable from the revenue earning point of view, can be hauled by trucks. If the "short haul" freight now shipped by railroad were transported by trucks the railroad congestion would be relieved, there would be lessened delays, the equipment now in use might be nearer adequate, there would be less investment re-

COMPARISON OF POPULATION AND REGISTRATION OF CARS AND TRUCKS IN OTHER SECTIONS OF THE COUNTRY.

State	Population	Trucks	Cars
New York.....	10,273,375	115,746	440,043
Pennsylvania	8,522,017	40,893	449,444
Michigan	3,054,854	37,105	288,798

quired and the traffic as a whole could be expedited to a material degree.

HIGHWAY HAULAGE NOT DESTRUCTIVE OF RAILROADS There is no reason to assume that there will be competition between railroads and highway transportation lines to the detriment of the older organizations. To the contrary, the development can be made cooperatively so that there will be freightage by whichever carrier will be the best suited, and, it is not at all improbable that the railroads can adopt the plan the vogue with English railways, which use trucks to haul freight to and from their yard terminals, affording a complete service.

The supposition that railroads and highway haulage service corporations must of necessity be competitive is not well founded. If this belief is tolerated there will undoubtedly be conflict of public sentiment that will be prejudicial to the interests of all who have need of transport, but if there is coordination of service so that each community will have what will best serve it, there is little doubt that transportation will be greatly improved.

BIG HIGHWAY IMPROVEMENT PLAN The nation, the states and the municipalities are today committed to a plan of highway improvement that will lessen the time of vehicle hauls, reduce the operating

cost and generally stimulate business enterprises. Throughout the country more than a billion dollars is now available for road construction and there is reason to believe that this policy will be continued, for no one will take issue with it, politically or economically. If the people as a whole are willing to expend the money to build highways there is every reason why they should receive the practical results of their expenditures, and unless they have the service of power vehicle transportation road building cannot be regarded as a national economic necessity.

RATIO OF TRUCKS REGISTERED TO POPULATION.

State or Region	Population	Trucks Registered	Ratio to Population
Massachusetts	3,719,156	53,304	1:69
New England.....	7,156,614	93,748	1:76
Michigan	3,054,854	37,105	1:82
New York.....	10,273,375	115,746	1:88
Pennsylvania	8,522,017	40,893	1:208

In New England the completion of the projects for which appropriation of funds has been made will still further improve the highways. With the betterment of the main channels of communication between commercial centers service that is regular and dependable can be established. These companies can be promoted with the knowledge that they can be controlled by those who offer freight, that they will not be subject to the dictation of politics or organizations, and that they will not be manipulated by financial high binders at the expense of the stockholders.

The service can be coordinated so that transfer or transshipment can be made and transportation can be beyond any one terminal. There are no limitations to the possibilities of service development, which must depend upon the initiative and resourcefulness of the managements.

HIGHWAY TRANSPORT WILL DEVELOP RAILROADS What has been stated with reference to highway transportation has been to emphasize the proportions of the potential market for power vehicles in New England, and applies to freight carrying only. Whether or not passenger service can be operated that will afford satisfaction equal to that of electric railroads is a question. But without considering this form of service five trucks can be used to every one now owned.

This may appear to be a large estimate, based on the present registration of power vehicles, and means that more than 500,000 machines can be utilized, but when the possibilities for hauling much of the freight that is now hauled short distance by railroads are considered the figure stated appears well within the range of reason. Practically all the trucks now in use are carrying freights in individual service. There is but little freighting between commercial centers. When sufficient tonnage is offered so that cargoes can be carried both ways, or practically all the mileage driven, minimum rates can be charged and reasonable profits made.

MUCH DEPENDS ON ADMINISTRATION Of course all depends on organization and business administration. No person can expect to engage

in public service and obtain and retain patronage unless he can operate to schedule and be reliable as to time of deliveries. In other words, highway transportation cannot be successful as an enterprise unless it meets every requirement.

The development of power vehicle public service cannot be undertaken successfully by those who do not or will not recognize business principles. One must accept first of all the need of time and labor economies and be guided by facts obtained from records rather than depending upon custom, tradition or methods of others.

The power truck industry and its sales representatives must sell transportation, and to do this must deal with actualities, not theory. Each proposition will differ materially and while general principles may be applied, these are often secondary in the determinations that must govern investment and operation.

The enormous possibilities of New England with reference to highway haulage service can be realized upon very largely, but not by merely selling machines. The buyers must have the benefit of transportation experts and these can best serve as advisers of all engaged in public service transport, not for the promotion of any one concern or enterprise.

FACTS THAT ESTABLISH NEW ENGLAND AS THE POTENTIAL TRUCK MARKET OF THE NATION.

Connecticut has one truck registered to every 56 inhabitants; Massachusetts one truck to every 69, and Rhode Island one truck to every 85.

These three states collectively have one truck to every 67 inhabitants.

New York, with the large duplicate registration of trucks from Connecticut and New Jersey, has one truck to every 88 inhabitants.

Michigan, with Detroit, in which are many of the largest concerns of the industry, has one truck to every 82 inhabitants.

Pennsylvania, with 1,365,403 more residents than New England, with 449,444 cars registered against 449,798, has but 40,893 trucks to 93,748 in New England.

New York, with 10,273,375 inhabitants, has but 21,998 more trucks than New England with but 7,156,614 residents. New York has but 440,043 cars as against 449,798 in New England and 449,444 in Pennsylvania.

There are more than 125,000 business concerns in New England that are prospective buyers of trucks. These may require from one truck to a large fleet.

Obviously the locality for the industry to concentrate its promotion is the most potential market, and in no locality are there so attractive prospects as in New England.

Truck manufacturers have not as a rule realized the possibilities of the New England states as a market for machines. They have often been satisfied with a single representative in Boston, when they should have strong organizations with agencies at least in the principal cities. There is no question that where trucks are so numerous service is of vital importance. The companies that want big business must go after it in a big way, and intensively exploit the sections of the country where sales can be practically developed. Unless this policy is followed only the surface is scratched and those who do not carefully direct their endeavors will fail to make the most of their opportunities.

HERCULES HEAVY DUTY TRUCK ENGINES

DEVELOPMENT to meet the service is the claim made by the Hercules Motor Manufacturing Co., Canton, O., for the truck and tractor engines it builds. The company has been established a number of years and it has a large and well equipped plant. Its experience has been exclusively with building engines of different types, and eventually it specialized designs created solely for heavy duty. The company's engineering department is large and carefully organized. It has for several years investigated certain principles of construction and the results obtained with laboratory and service experience have been regarded as justifying constructional detail that has been adopted for the present series of Hercules engines.

The Hercules engineers maintain that adaptations of design that have been proven in any other service are not as a rule practical when the work is necessarily heavy and endurance is essential.

principles, but for more than three years the present design has been in development. It has certain distinctive features of construction that are based on good engineering and while price, power and weight are three factors of prime importance, efficiency at a minimum of operating cost, endurance under heavy load, protection of moving parts, adequacy of lubrication, accessibility and simplification are equally desirable.

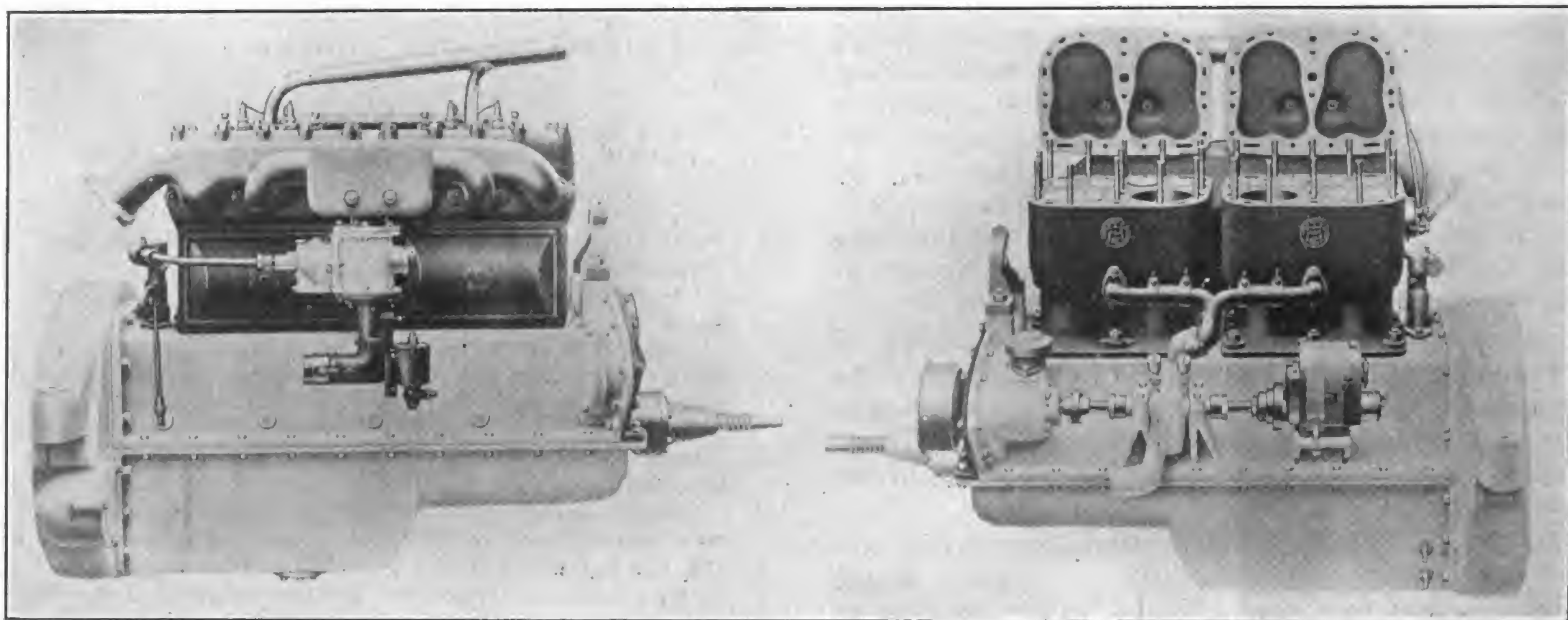
Claim is made for Hercules design, which is identical for the entire series, although dimensions of part necessarily differ, that endurance has been the first consideration. Endeavor has been made to so distribute the material to obtain maximum strength with minimum weight, to insure against failure or fatigue of metal, this being the practical manner of obtaining endurance. Statement is made that the factors of safety are largely in excess of conventional practise.

tered in them, so there will be movement of the water across the combustion heads, this insuring efficient cooling. The spark plug bores are directly above the intake valves. Each head is retained by a series of 13 studs.

The base flanges of the unit are heavy and these are each secured to the crankcase by six large bolts. Under the valve pockets are webs on which are seated the pressed steel covers that house the valve stems and tappets, these each being retained by a finger wheel that is instantly accessible. The pistons are long and are each fitted with three diagonally split rings and with a snap ring that covers the ends of the wristpins, this obviating scored cylinders from the pins loosening. There is a single oil groove at the bottom of the piston skirt.

Crankcase Has Separable Bell Housing.

The crankcase is cast in two sections. The upper section has three central vertical webs that carry the main bearings,



Large Type Hercules Engines: At Left, Valve Side of the Unit Having Cylinders Cast in Pairs; at Right, Left Side, with the Separable Head Removed to Show the Accessibility for Cleaning and Repair.

That is, a type that might afford satisfactory results for some works would not endure mechanically and might be extremely unsatisfactory when worked constantly under heavy loads.

The standards for design are usually established by the experience of engineers and each individual works out what will best serve, assuming a given requirement and providing whatever factor of safety may appear necessary. Once determination has been reached then experiment is necessary to prove theory, and such changes as are desirable are made and observation continued until what may be regarded as finality is obtained.

Developed by Three Years' Experience.

Then the design is accepted as the basis for production and further modification is made with a view to perfecting it, and with continued service what is practically evolution develops what will meet specific needs. The Hercules engines are built to well established prin-

All Hercules engines are constructed with five journals for the crankshafts, this affording greater rigidity than is possible with three journals, obviating the possibility of whipping and allowing somewhat lighter construction, and at the same time minimizing the wear both on shafts and main bearings, lessening the cost of maintenance and prolonging the service life, which is a potent factor with any owner.

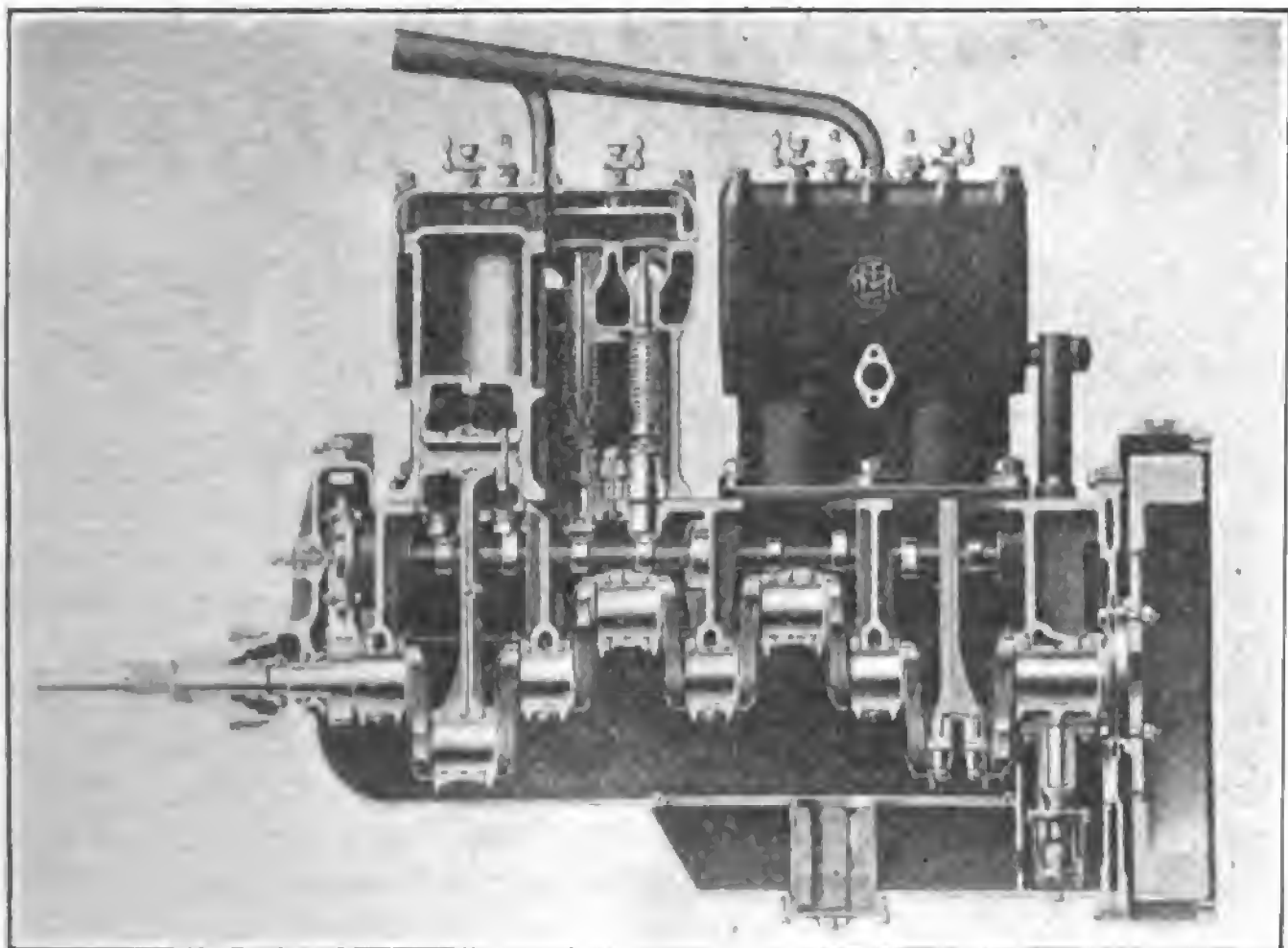
Design Is Conventional.

The larger engines are a four-cylinder, four-cycle, water cooled, vertical, L-head type, having long stroke, and the cylinder units are cast in pairs with the water jackets integral. The water jackets are large and extend to the bases of the expansion chambers, and are so constructed that there will be exceptional freedom of flow of the cooling medium, the water entering at the bases of the jackets and circulating around the cylinder walls. The cylinder heads are separate units with the water outlets cen-

tered in them, so there will be movement of the water across the combustion heads, this insuring efficient cooling. The spark plug bores are directly above the intake valves. Each head is retained by a series of 13 studs. The base flanges of the unit are heavy and these are each secured to the crankcase by six large bolts. Under the valve pockets are webs on which are seated the pressed steel covers that house the valve stems and tappets, these each being retained by a finger wheel that is instantly accessible. The pistons are long and are each fitted with three diagonally split rings and with a snap ring that covers the ends of the wristpins, this obviating scored cylinders from the pins loosening. There is a single oil groove at the bottom of the piston skirt.

The bell housing that encloses the flywheel is a separate single-piece casting that is secured to the rear ends of the crankcase sections. At the forward end of the crankcase a cover plate completes the upper section and houses the timing gearset. Ahead of the forward cylinder unit on the crank case is mounted the bracket in which is carried the shaft bearing of the fan.

The crankshaft is drop forged from chrome-nickel steel, heat treated and



Longitudinal View of the Large Size Hercules Engine, Showing Construction and the High Pressure Oiling System.

ground to dimensions. The flywheel flange, and thrust flanges at either side of the rear journal, are integral with the shaft. The cheeks of the crank throws are practically at an angle of 90 degrees to the axis of the shaft. The camshaft is a steel drop forging, with the cams integral, that is case hardened and ground. The timing gearset gears are large, have wide faces and are helical cut. End play of the camshaft gear is insured against by a thrust screw under spring tension that is adjustable.

Other Engine Detail.

The main bearings are very large and of highest grade babbitt metal mounted in bronze shells, and these are fitted with laminated shims to obtain close adjustment. Claim is made that the pressure is greatly reduced through the large size of the bearings.

The connecting rods are heat treated, I section, steel drop forgings, with extremely wide offset big ends, the caps of which are each retained by four bolts. The rod bearings are babbitt metal in bronze shells and these are fitted with laminated shims. The wristpins are special steel tube, case hardened and ground, that are secured in the piston bosses by set screws, and on these the bronze bushed ends of the connecting rods oscillate.

The valves are large and are mounted in long guides that are easily renewable. The valve tappets are a roller type fitted with adjusting screws and lock nuts that move in guides seated in the base flanges of the cylinder units. These may be renewed when worn.

Lubricating and Cooling Systems.

The engine is lubricated by a pressure system that is claimed to be very effective. There is a compartment at the rear of oil reservoir with an opening in the dividing web, that is the oil pump well, and in this is the screened intake of the gear pump, driven from the camshaft. The oil is drawn from this well and forced through a manifold to all the main and camshaft bearings and to the timing gearset; from the main bearings the oil is carried through the drilled crankshaft to the crankpins, and from these through tube to the wristpins. The cylinder and

piston walls, the cams and the valve tappets and the valves are lubricated by the oil thrown off by the centrifugal motion of the crankshaft. As the oil is always under heavy pressure there is positive lubrication, and the excess drains to the base of the crank chamber and thence to the reservoir. As the oil is twice filtered it should be very free of foreign matter and should have good lubricity for an unusually long period unless

diluted by leakage past the pistons, a condition that is not probable until after extended service.

The oil pump is very accessible and can be easily removed and cleaned, and the pump well can be drained and flushed by removing a plug in the base, this being supplementary to the main filter in the reservoir.

The engine is cooled by a circulation of water forced by a centrifugal type pump that is driven by an outside shaft by a gear that meshes with the timing gearset. This pump is mounted on a bracket cast integral with the upper section of the crankcase and an extension of the drive shaft actuates the magneto. There are flexible couplings in this shaft between the gear and pump and the pump and magneto. A four-blade fan with a shaft mounted in a large bearing in an adjustable bracket is driven by a wide flat belt from a pulley on a forward extension of the water pump shaft. The water is carried into the cylinder jackets at the bases of the jackets. The engine is governed by a governor driven by a flexible shaft from a vertical extension of the oil pump shaft. The fuel is carried into the intake manifold and heated by a "hot spot" and is distributed preheated to the several cylinders. Claim is

made that the design of the engine is such that it is specially suited for the consumption of low grade fuels, and that with these it will develop exceptional efficiency.

The engine is built for three-point suspension—by arms formed integral with the bell housing, and by a trunnion concentric with the forward crankshaft extension.

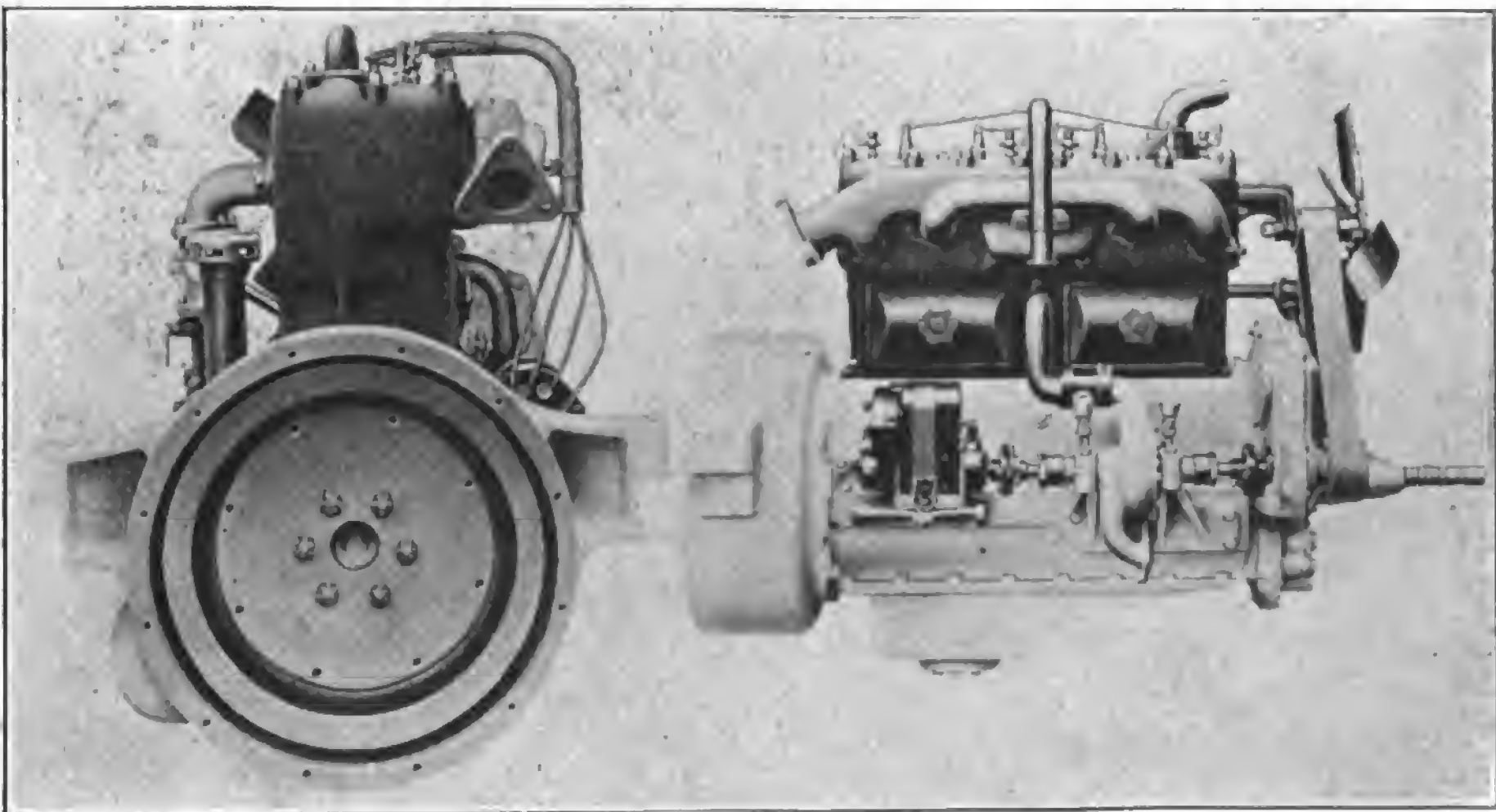
Small Engines Differ Somewhat.

A smaller type of Hercules engines is built that has the cylinders cast en bloc, with a separable head, and with the bell housing for the flywheel cast integral, with the upper section of the crankcase. The arrangement of the timing gearset is different, for the camshaft and the outside shaft that drives the water pump and magneto are both on the right side of the engine, and the water pump and magneto are both seated on removable brackets. The governor is also differently located, this being driven by a pair of shafts and beveled gears from the timing gearset. The other details of construction are practically the same. Two illustrations of the large engines and one of oiling system, and two illustrations of the small engines are shown.

NORWEGIAN INVENTS SUBSTITUTE FOR PNEUMATIC TIRES.

An invention which it is claimed will serve as an efficient substitute for the pneumatic tires now used on motor vehicles, has just been perfected by Lieutenant Colonel Fridtjof Anderson, a retired Norwegian army officer. It involves the use of steel springs tangentially applied to the wheels, with an outer rim of solid rubber, steel, wood or other material. The inventor claims that spring wheels manufactured to his designs may be used on street cars and railway trains, as well as on lighter vehicles.

The Anderson Electric & Equipment Co. has succeeded the Anderson Electric Specialty Co. of Chicago, the change being to make the corporate name more descriptive of the character of the products. There is no change in the officers or personnel of the organization.



The Smaller Hercules Engines: At Left, Rear End of the Complete Unit; at Right, Valve Side of the En Bloc Cylinder Type.

BRITISH IMPORT POLICY UNDECIDED; LACK OF TRUCKS STAGNATES BUSINESS

GLASGOW, Jan. 17.—The future of the automobile vehicle industry of England is uncertain in the opinion of many who are engaged in it, largely from the fact that no definite policy has been reached with reference to importing machines. During the war nearly every manufacturer turned his works to production of munitions and military necessities. There were practically no cars or lorries built save those ordered by the government, and while some of the manufacturers booked orders that were to be filled after the government's work was completed, comparatively few of them built either cars or lorries.

One reason for this was that economy was practised by all. The shortage of petrol necessitated prohibition of the use of automobiles that were not required in the government service, and those who could pay the high prices for fuel were not able to obtain it. Another reason was that when hostilities ceased there was no knowledge of what the government would do with the thousands of cars and lorries used in the military operations at home and abroad. If these were sold for whatever prices could be obtained there was belief that this would at least saturate the demand for new vehicles, and there was no foundation for hope that the industry would be able to so control the market that prices could be maintained.

Policies Must Govern Action.

There was some agitation for the government repairing all used machines and selling them gradually so as not to completely disrupt the demand, which was feared by the industry. Manufacturers as a rule were loath to plan for future production, where considerable investment was necessary, until they had definite knowledge of how the government would dispose of the surplus of army vehicles, and they were unwilling to accept any other view than that the industry should be protected so far as this could be done. The government was inclined to assist the industrial interests in protecting the home market, but was unable to act until a definite policy had been determined that would meet the approval of the manufacturers.

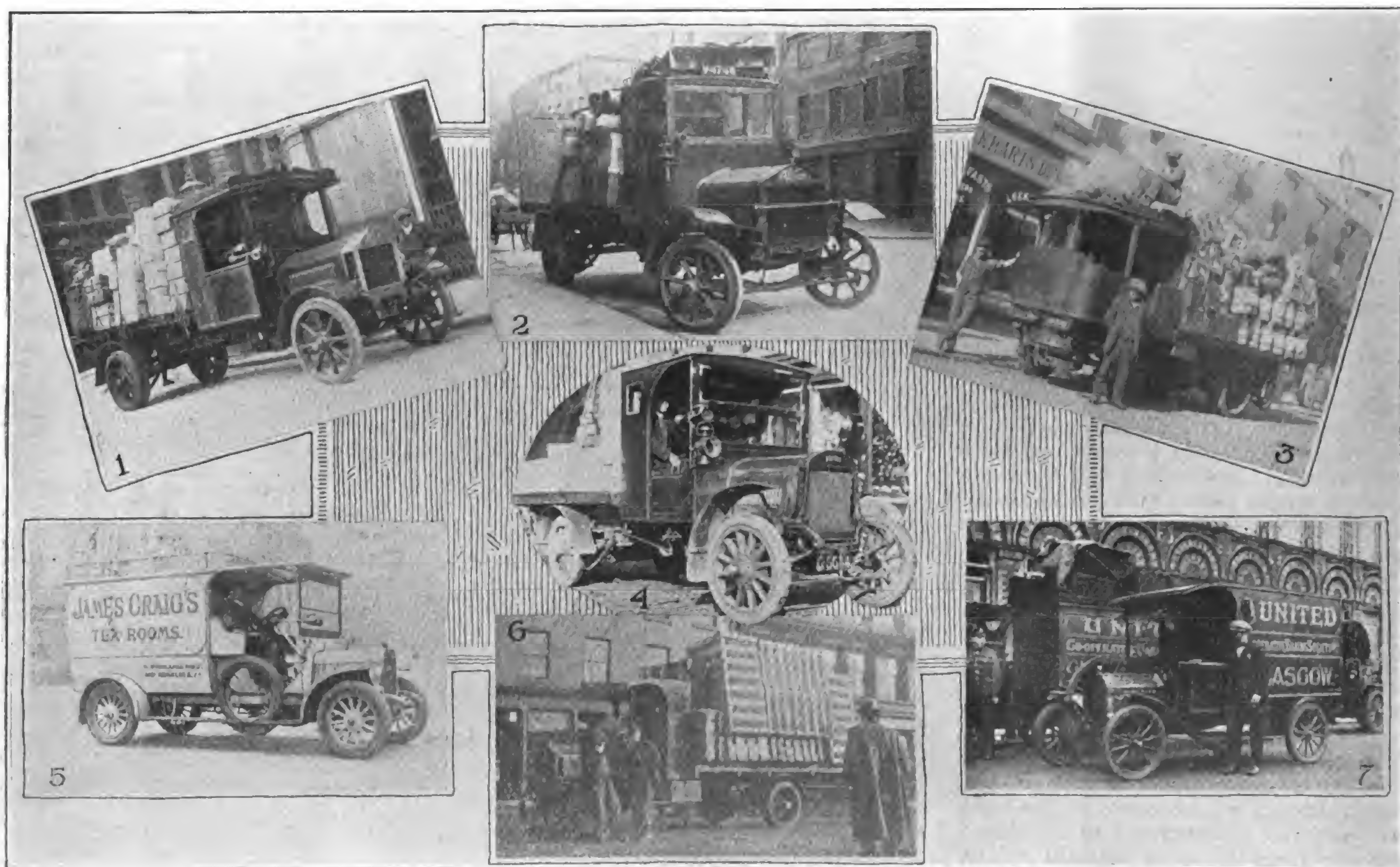
While the attitude of the government was all important to the automotive industry, there was need of the government giving equal consideration to all other industries, and governmental policies must need be shaped with reference to these as well. And quite as important was reaching policies that would satisfy the working classes, which have been unable to reach agreements with employers with reference to hours of work and wages.

Capital and Labor at Odds.

Until industry as represented by capital and labor were agreed as to work and

wages the government could not intelligently establish policies that would sufficiently protect either interest, so far as stimulating production and restricting the importation of foreign products were concerned. Crystalizing the widely divergent opinions of the people into practical policies with the object of shaping these to best serve the nation as a whole has been a herculean undertaking, and it has by no means been completed. To the contrary, seemingly whatever has been done has been in a measure a stop gap preliminary to determinations which will depend upon developments.

There is no question that the people are in a more receptive frame of mind than they were a year ago, but industry is far from being stabilized. There are those who believe that all policies should be based on the experience resulting from the war and that whatever governmental action is taken should be with a view of national welfare first of all. There are others who believe that each interest should be given consideration. Obviously, to harmonize capital and labor and to adjust government policies to best serve all, every factor must be weighed, and trade relations the world over must be studied. Not only this, the variance in rate of exchange has important bearing. As a matter of fact trade adjustment must of necessity be slow, for precipitate action might prove disastrous.



Typical Products of the British Automotive Industry: 1, 50 Horsepower Belhaven Lorry; 2, 50 Horsepower Alblon Lorry; 3, Four-Ton Sentinel Steam Lorry; 4, 30 Horsepower Unitas Lorry; 5, 30 Horsepower Argyle Bread Van; 6, 50 Horsepower Caledon Lorry with Load of Glass for Export; 7, Ford Chassis Equipped for Bread Delivery.

Obstacles to Industrial Readjustment.

Summarized, conditions may be said to be practically as follows: The government, because of its enormous indebtedness, must exact heavy taxes, and to pay these taxes the people must be paid much higher wages than ever before. This means that prices must be increased despite the fact that the industries, to gain export trade in competition with other nations, demand that production cost be as low as is practically possible. High import taxes will limit British buying abroad, although much raw material and more or less finished products must be purchased. Not only this, the shrinkage of the purchasing power of English money means the increase of cost of all imports.

The governmental operation of the railroads and the demands of the employees has greatly increased the cost of transportation, and the people favor the use of highway transport wherever possible in competition with the railroads to lessen this cost. The use of motor lorries for haulage between many of the manufacturing centers is increasing, and study of costs has established that this work can be done with lorries quicker and cheaper than by the railroads. For this reason there is demand for lorries of different types considerably in excess of the production and used vehicles are bought at prices that often exceed the original cost. The automotive industry

is not disposed to engage largely in manufacturing until the attitude of the government is determined and trade has reached what may be regarded as a stabilized basis.

What the Business Interests Want.

The following opinion of a conservative observer may be said to fairly represent the condition now existing with reference to national trade policies:

British manufacturers of industrial vehicles are still very strongly against the removal of import restrictions. A deputation representing the industry on this subject did not receive much sympathy from the Minister of Transport, who pointed out that American industrial vehicles and tractors were handicapped to the extent of about 45 per cent. import tax.

This would seem to be ample protection, but the builders of these industrial vehicles are evidently concerned about their trade and are afraid that unrestricted import would reduce the work of the home manufacturer to a minimum.

Of course the question is one of what is best for the whole community and nobody can say that anything which can be done to increase our fleets of motor transports has not the welfare of the country at heart.

The production of our vast acres of land is of more importance than the limited restrictions which might bring about

the building of a few odd tractors or motor lorries. And when the harvest is ready to be reaped we want to be in a position for the speedy transport of the produce.

Many of our industries are practically at a standstill for the want of motor transport, and now the railway delays seem to be a recognized feature of the country control it is the only means of economy for some of our big firms.

There is no difficulty in assuring the commercial firms of the economy of motor transport but the question which they are face to face with is must we wait until the lorries are made in our own country?

Some think that it would be a more definite and sounder policy to import the essential wagons and to let the industrial progress of the country proceed. This may not be a popular view in the motor industry, but it is certainly the most reasonable if the welfare of the country is to be considered. At the present time there are scores of concerns that have failed to maintain a transport service for the want of vehicles, and it is only when you get in touch with the cotton and provision merchants, engineers, manufacturers, etc., that you have the other side of the question.

These interests say that they have loads to carry, but they cannot get in touch with the right vehicles, and delivery is extremely slow and protracted.

BIG ENGLISH TIRE PLANT AT BUFFALO

DUNLOP, AMERICA, LTD., is the title of a new tire concern that will, if the plans made are realized, operate on a very extensive scale in this country, and it will be affiliated with the Dunlop companies in other nations. The company has been incorporated and will acquire all the rights of the original American Dunlop Tire Co. It has purchased about 150 acres of land at Buffalo, N. Y., on which will be erected a large plant which will have all the facilities and equipment that the experience of the company in producing highly specialized products has developed, and the cord fabric, which will be used exclusively, will be carded, spun, twisted and woven from the raw cotton in a mill that will be erected on the same property. Other than tires the company will manufacture Dunlop golf balls only. The pneumatic tires will be very high grade and the solid truck tires will be identical in quality with those Dunlop tires that were used on a very large part of the English army transports during the world's war.

The organization of this company is the re-entrance of the Dunlop interests into the American tire industry. The original Dunlop tire was developed in England by Thomas Dunlop and associates and about 30 years ago the American rights to manufacture this type of pneumatic tire were acquired by Harvey du Cros, who was president and founder of the Dunlop company. The American Dunlop Tire Co. was formed and established a

plant, and it was successful, but more than 20 years ago it was sold and was merged with others in a consolidation of tire companies. The English company, with subsidiary and allied companies, continued to develop Dunlop tires in all other parts of the world with so large a measure of success that it is claimed to be the largest tire concern in the world outside of the United States.

The Dunlop company has tire plants in England, France, Japan, Canada and Australia; it has rubber plantations in the Malay Peninsula and Ceylon of 60,000 acres, which is said to be the largest unit of rubber estates owned by any one European concern; the Dunlop cotton mills at Rochdale, England, with 350,000 spindles, have the largest production of any similar mill in Europe, and the Dunlop sales organization is in every country in the world.

The current market value of the British company's capital is about \$100,000,000, the common stock standing at premium of approximately 900 per cent.; a new issue of \$5,000,000 common stock has just been made at a premium of 700 per cent., and is now being taken by the stockholders. The capital for the erection of the American plant was provided independently by the issue in England a few months ago of \$20,000,000 common stock, convertible into the common stock of the American company when formed. Associated with the British company in this issue are James White of London and W. P. Seabright & Co., Inc., banker,

of New York and London. This stock has been dealt with in England at a premium of more than 100 per cent.

A commission that includes some of the principal executive members of the board of directors of the English company, with a staff of experts, came to this country in November of last year and is now arranging for the erection and equipment of the Buffalo plant. The factory will be operated by a staff of Americans as an American company and the board of directors will be largely American, but will include some of the principal members of the board of the English concern. It will have the benefit of a full interchange of the patents and technical processes with the British and other Dunlop companies, as well as the services free of cost of an advisory committee constituted from the expert staff of the British organization. Announcement will shortly be made of the directors and officers of the new concern.

AUTOMOBILE EXPOSITION AT COPENHAGEN, DENMARK.

The Copenhagen, Denmark, Association of Automobile Dealers is erecting a temporary exposition building in Tivoli, a large amusement park in the center of that city, preparatory to holding a motor car show early in the year. This will give exhibition space for at least 200 passenger cars and trucks, and will cost about \$45,000.

GOODYEAR ENGINEERS DEVELOP SIX WHEEL TRUCK IN TIRE EXPERIMENT

RESearch and experiment, both in laboratory and in service, are consistently carried on by many tire manufacturers, especially the concerns recognized as the leaders of the industry. Obviously the determination with reference to design and construction are given publicity in varying degrees when new types are produced, but the details of manufacture are usually closely guarded. These are the exclusive property of the manufacturer.

The details could not possibly benefit the buyers of tires, but they might be extremely valuable to those engaged in manufacturing tires. Large sums of money are expended in experiment and test, and investigation may extend over a long period of time. And not infrequently they lead into channels that may appear to be more or less remote.

And for that reason the experimental work of the Goodyear Tire & Rubber Co., carried on at the factory at Akron, O., has been productive of results that are especially interesting and may lead to further investigation of the practical possibilities of a type of six-wheel truck that thus far have been measured by comparison with other constructions and varying wheel and tire equipment.

As the Goodyear company is engaged in tire manufacture and is concerned only in development of truck wheel equipment, the tires that will be most economical for truck owners and which will minimize wear of roads are the subject of direct research.

The particular subject with which this statement deals is a truck having six wheels, four of which are grouped under the rear end of a chassis in much the same form of assembly as the truck of the steam railroad coach, which has been experimented with by Goodyear engineers.

Many Claims for Superiority.

Claim is made that actual demonstration and close tabulation of results appear to indicate clearly that this "six wheel" or tandem rear axle construction with pneumatic tires on all wheels has steadier riding qualities, better traction, is less wearing of road surfaces, has lighter axles, smaller and lower cost tires and greater braking capacity, and the vehicle has greater operating radius.

The development of this type machine was due to the strong conviction of P. W. Litchfield, factory manager for the Goodyear company, which was expressed at a recent joint meeting of the members of the Detroit and Cleveland sections of the S. A. E. held at Akron, that the heavy tonnage truck would be some form having more than four wheels, an evolution that may be comparable to the railroad car construction practise of grouping pairs of axles in frames known as trucks and mounting one of these trucks at each end of a car. There was no endeavor made to perfect a truck design, but careful study was made of the practicality of

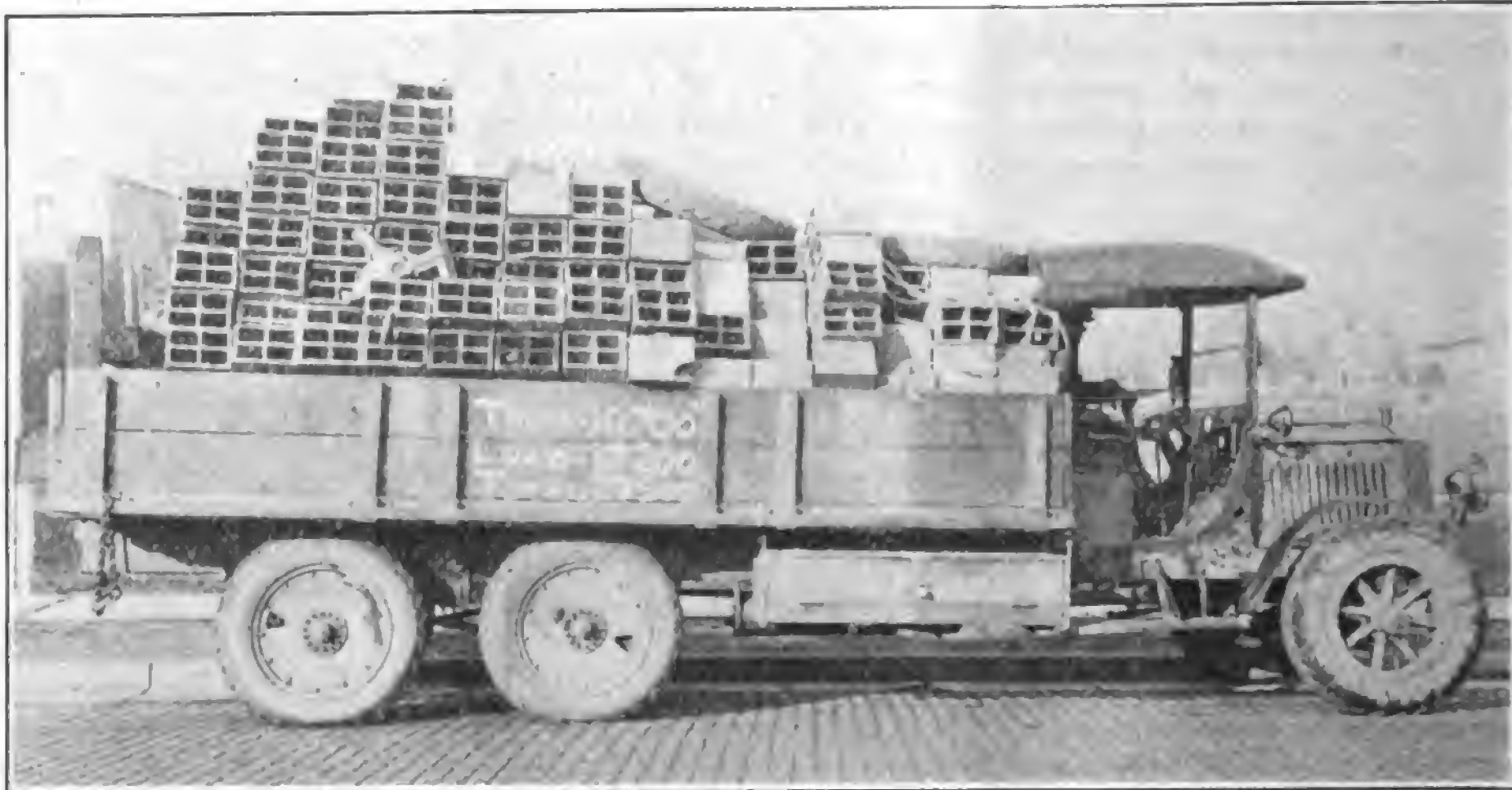
pneumatic tires for vehicles built to haul heavy freights.

Large Saving in Tire Cost.

Special interest attaches to tire weight and cost, which are probably the factors that most deeply concern truck owners, and instead of using 48 by 12-inch pneumatic shoes, weighing about 398 pounds each, that are designed for five-ton trucks, with the tandem axle construction four 40 by eight-inch pneumatic tires, each weighing 119 pounds, are used. The four tires weigh 476 pounds against 796 pounds for the "giants," and as they are each 279 pounds lighter they can be handled far more easily, a matter of no small importance when changes are necessary, especially if the work must be done outside of a garage or service station. Not only this, the set of four tires will cost approximately a third less than the two larger tires. And as the same tire is used on all wheels the number of spares is reduced to that which will insure continuous service.

er operating radius and steadier riding. The vehicle is said to have greater road adhesion than the two-wheel type and there is so little vibration of road shock that no water was spilled from a glass filled to within an inch of the top, placed at the rear of the truck body, when the machine was driven on rough roads. When moving over obstructions the chassis rise and fall is but half what would result with two-wheel drive types, and the vibratory stresses from road shock are greatly reduced, much increasing the comfort of the driver. During recent hauling tests made between Akron and Cleveland the shock absorption was so effective that the machine was driven 48.6 miles at an average speed of 26 miles an hour, and the average speed through heavy traffic when leaving Cleveland was eight miles an hour.

Having a road surface contact 27 per cent. greater than that of the two 12-inch tires the four eight-inch tires had decidedly better traction, which was claimed



Goodyear Six-Wheel Truck of Five Tons Rating, Weighing 10,700 Pounds, with Load of 17,200 Pounds, on 40 by Eight-Inch Pneumatic Tires.

With reference to wear of roads, statement is made that the pneumatic tire would appear to win the approval of engineers, for the average road has the maximum base that is practical and the surface disintegrates under the impact of solid tires. With the weight of the truck carried on four wheels, road and truck engineers believe that the average highway will endure under a load up to seven tons with no more wear than would result from a 3½-ton load carried on two solid tires. Road economy undoubtedly appeals to the people, and there is belief that if this is obtainable with use of the six-wheel vehicle the result would offset any sentiment against the use of heavy vehicles on highways, and would further stimulate appropriations of money for highway improvement.

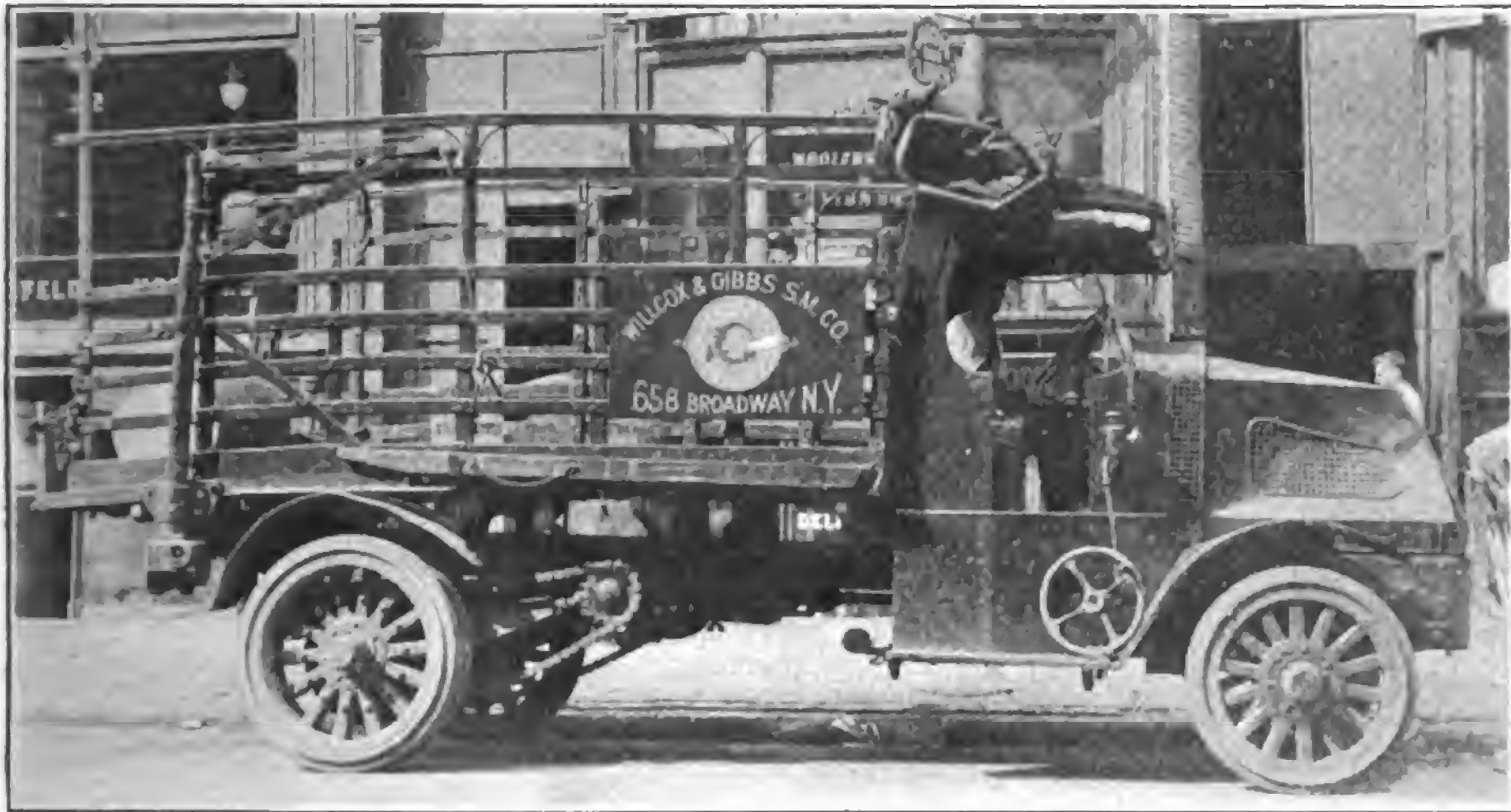
Much Greater Shock Absorption.

An advantage of pneumatic tires with the tandem axle construction that is emphasized by Goodyear engineers is great-

to be specially noticeable by comparison with dual solid and pneumatic tires on high crowned roads, and in soft surfaces where the additional tire area prevented the wheels sinking and the truck stalling.

Because of the light weight of the smaller pneumatic tires the total axle weight is greatly lessened with the four-wheel construction and with four brakes there is a far larger degree of safety than with two larger wheels. One of the chief objections by engineers to the use of 48 by 12-inch tires is the extreme height of the center of gravity, for the load is high above the ground, but it is much lower and there is the added stability of four-wheel support with the experimental Goodyear truck. The accompanying illustration is of the truck, which weighs 10,700 pounds with a load of 17,200 pounds, or eight tons 1200 pounds, a total of 27,900 pounds, or nearly 14 tons. This is three tons 1200 pounds in excess of the normal load rating of a five-ton truck.

HANDLING TRUCK FREIGHT WITH HAND AND POWER CRANES A LARGE ECONOMY



Mack Truck Equipped with a Manually Operated Crane, Having Capacity of 1400 Pounds, in Service of Willcox & Gibbs Sewing Machine Co., New York City.

ECONOMY of truck service is resultant from innumerable factors, and the relation and the value of these can only be determined by careful analysis of records and comparisons of the cost of work. The transportation manager who believes in efficiency and organization can increase his economies by providing equipment and facilities that will save time and labor for his men and the time of his trucks, and the aggregate may be surprisingly large.

An example of possibilities is found in the service of the Willcox & Gibbs Sewing Machine Co., operated in New York City. The company has first of all approved economies and encouraged its employees to bring these about. By supervision of its reports and analyzing the unit cost of handling its products attention was directed to developing labor and time saving methods which would not have been possible were the items of expense ordinarily the basis of judgment alone considered.

For instance, from record of operating cost that included overhead or fixed charges and the variables of expense, such as fuel, lubricants, some repairs and perhaps tires, little could have been learned, although these are usually regarded by owners as highly essential information. Only by obtaining closer insight into details and seeking wherever possible to reduce cost could the factors of time and labor be sufficiently studied to endeavor to obtain further practical economies.

Nine Trucks of Three Makes.

This company produces sewing machines in large numbers in several factories and has stores and offices in many cities. The New York City office has jurisdiction over a very productive territory and the business transacted is large. In New York City the company operates nine trucks, seven of which are Mack, ranging in load capacity from two to 5½ tons, one 1500-pound GMC truck and a Locomobile car chassis converted to 1500-

pound rating, which are utilized for both delivery and transportation. From these sufficiently diversified records are obtainable to well establish any haulage information that is desirable.

As the endeavor of the company has been to constantly increase the economic value of its products, it has systematically developed the operations of its factories, and there is nothing surprising in its careful inquiry into haulage expense and the adoption of records and methods that would insure the greatest productivity of the vehicles.

For more than a half century the company has operated a works at Poughkeepsie, and when it built a garage building in New York an assembly plant for some types of its machines was established on the upper floors. It was good business judgment having the plant and the ga-

rage a unit, for there is no time lost in movement of the trucks. They are used only for the service of the company and are in readiness for the drivers when they report mornings, and the men can work the full number of hours before they leave them at night.

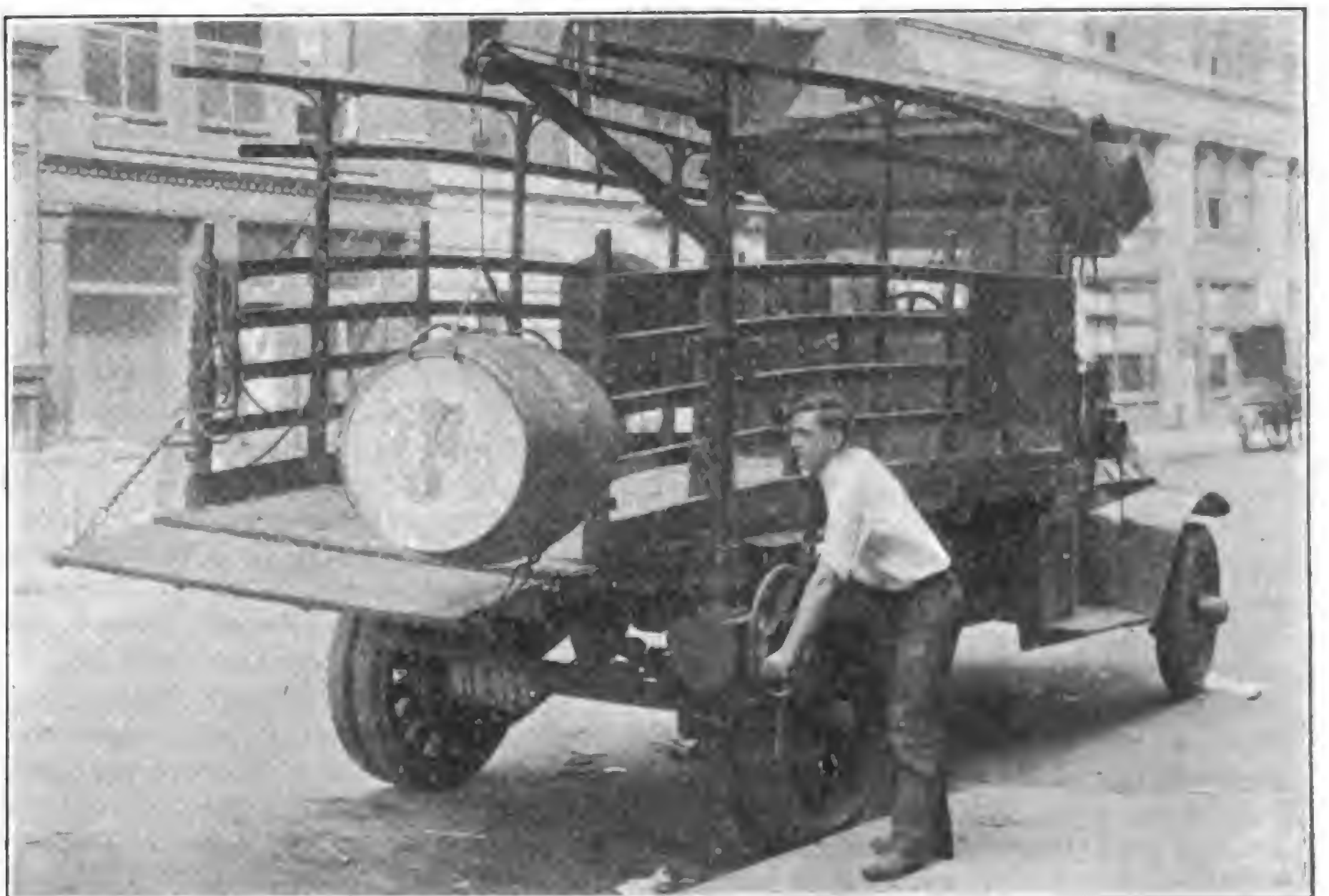
Positive Limit to Load Height.

The trucks haul material from the different freight terminals, some is brought from the Poughkeepsie factory 88 miles distant, shipments are made from the plant to terminals and machines are delivered in all parts of the city and suburbs. With reference to the haulage from the factory there are a number of bridges enroute, one of which has head room of but 10½ feet. This is the maximum height of a truck load above the ground. Instead of guessing or measuring the loads the garage was built with the same head room as the bridge, and the trucks can only be loaded to a height that will have sufficient clearance.

The shipments delivered from the assembling plant or the material brought in are carried from and to the upper stories by a large elevator, at which the trucks are loaded or unloaded. Each morning the trucks making deliveries are loaded at the elevator, and the machines that haul material are unloaded as they arrive from the shipping terminals.

Trucks Unloaded by Power Crane.

The trucks are unloaded with a simple and ingenious power crane designed by F. L. Mitchell, superintendent of truck transportation for the company. The crane is operated by one man and it will lift or lower loads up to 1500 pounds very quickly. The power is generated by a three-horsepower electric motor. The crane jib can be swung in an arc directly over the center of the truck deck and



With This Equipment the Driver Can Handle Any Load Quickly, Without Help and Without Danger of Damage, and the Labor Is Not Excessive.

the platform in front of the elevator. As the trucks are unloaded the elevator is operated and there is quick movement of the freights and practically no loss of time of the trucks. Claim is made that with the crane one man can do the unloading four times as fast as four men could do the same work without it, and without skids, rollers or lever bars.

The crane was found so economical that Mr. Mitchell designed a smaller type that is installed on all but the smallest trucks, which has capacity for lifting 1400 pounds. These cranes, as shown in the accompanying illustrations, are mounted at the sides of the platforms near the rear ends; the jibs can be swung parallel with the sides of the platforms when not in use, and the decks are not obstructed. As the crane masts are near the tailgates the loads can be lifted or lowered anywhere within the radius of the jibs and carried well forward on the decks of the trucks.

Statement is made that a truck can be loaded with drums of oil weighing

would similar time economy be obtained, and the cost of installation and subsequent upkeep would be excessive as compared with the manual hoist. Grapple hooks are used for loads of almost any shape or size, and only the heaviest packages necessitate the use of slings.

The heavy trucks are used for hauling material to and from the factory and from time to time are used with the two-ton machine to haul loads to and from the freight terminals. The two smallest trucks, and at times the two-ton machine, are used to make deliveries to homes and factories in the city and suburbs.

Good Care Minimizes Maintenance Cost.

The machines are well maintained and kept in excellent condition, for repair and adjustment is directed by a capable mechanic who has been employed to keep them constantly operative. Not long since one of the Mack trucks, which had been in service since 1913, was given its first complete overhaul, although it was in good shape. On inspection decision

This second machine was purchased in 1912 and had been driven approximately 75,000 miles before it was disassembled and examined with a view of thorough restoration. But a new chain and new high and second ratio and idler gears for the transmission gearset were all the new parts necessary. This statement merely emphasizes that if trucks are carefully maintained the service life will greatly exceed the periods usually assumed, in some instances by 100 per cent.

Superintendent of Transportation Mitchell of the Willcox & Gibbs Co. has supervision of the maintenance of the equipment, and his policy is constant attention to the mechanical condition of the machines. "As to a rule for keeping down costs," says Mr. Mitchell, "I can only suggest that policy of selecting a good truck in the first place and then keeping it in condition. Add to this every possible device that will keep the machine moving instead of waiting and you have the formula."

NEW TRACTOR FOR CANAL TRAFFIC IN BELGIUM.

A new hydraulic tractor for towing canal boats has been put into successful operation at Liege, Belgium. This apparatus insures much more rapid transit and is also less expensive than towing by steam, horse or man power. Boats of 350 to 400 tons which now require 10 to 12 days to make the 153 kilometers (95 miles) from Liege to Antwerp, arrive at their destination in five or six days under the new system. It is also claimed that the hydraulic tractor has the advantage of not injuring the tow line in getting under way, and the danger of collisions with other boats and with quays and embankments is diminished. There is also a saving of time in passing through the locks.

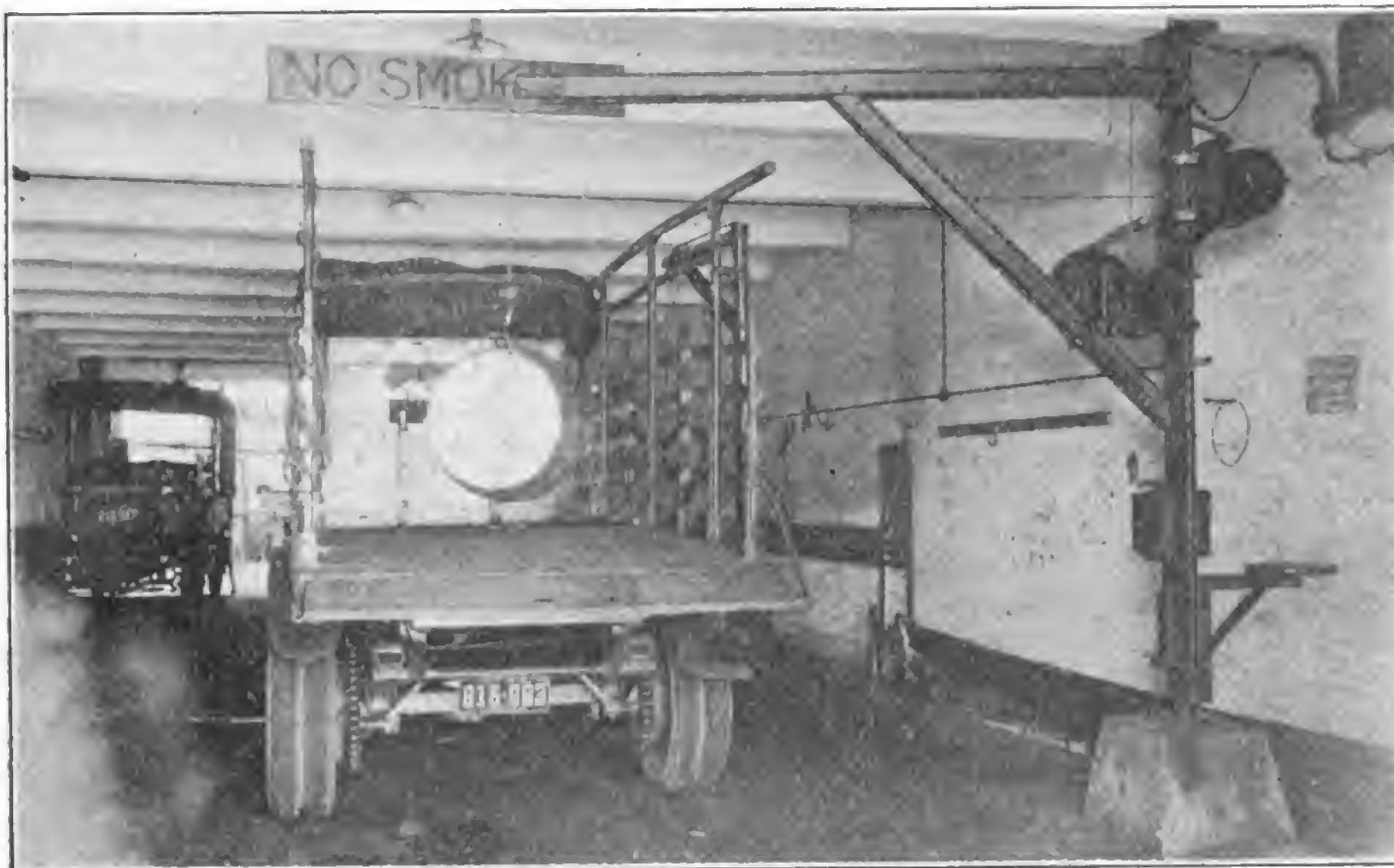
SALE OF GOVERNMENT LORRIES IN ENGLAND.

At the recent sale conducted by the United Kingdom, there was a big demand for Hallford three-ton lorries, which brought \$3095 each. A Daimler touring car went for \$2880, Napiers for \$1730 to \$2255, Ford cars for \$470 to \$860, and in one case a Ford touring car brought \$810 and a Ford van \$1100. Ambulances also brought big prices, a Straker-Squire going for \$2100.

One of the features of the sale was that representatives of manufacturers were there buying their own cars.

WILL BUILD LARGE SPRING PLANT AT DETROIT.

A tract of 30 acres of land has been acquired by the American Auto Parts Co., a concern recently organized with capital of \$5,000,000 at Detroit, on which a large plant is to be erected. William E. Perrine is president, W. P. Culver, formerly sales manager for the Perfection Spring Co., Cleveland, is vice president and sales manager, and J. W. Stanard is secretary-treasurer.



The Electric Power Crane at the Elevator Platform in the Garage, Where Loading or Unloading Is Done by the Driver Faster Than a Gang of Men Could Do the Work.

about 400 pounds each by one man with a crane more rapidly than the work could be done by two men working with skids, and the drums or barrels, which can be rolled, can be handled more easily than crates or boxes. Timed trials have proven this claim. When heavy boxes or crates are handled the saving of time is even more pronounced.

Manual Cranes Erected on Trucks.

There are those who might assume that were the crane operated by power even more time could be saved, but manual hoisting is maintained to be faster unless the power hoist is handled by two men—one at the control and the other swinging and placing the freight units. The crane is intended for one man work, and the man operating the hoist can see the load constantly, which is essential when the packages contain fragile contents. He can swing the crane jib and can lower the load with such care that it is always protected. Only by extending the power crane controls back to the rear end of the truck platform

was reached that about \$25 worth of parts would be needed and these were purchased that the work might not be delayed after it had been begun.

The parts included a new fender, a set of ball bearings for the end of the high speed gear shaft and a set of babbitt lined bronze crankshaft bearings. Though the machine had been driven more than 60,000 miles, only the fender and one of the ball bearings were used, for adjustment restored the transmission gearset shaft, and the crankshaft bearings were sufficiently tightened by the removal of a pair of shims from each bearing. There was no perceptible wear of the crankshaft. The total cost of all parts used, including the fender, was about \$15.

The comparatively slight wear after so long a service and mileage was due to the careful attention given to lubrication, the cleanliness of the machine generally and the engine in particular, the constant inspection and adjustments. But by comparison with another Mack truck overhaul cost this record is not exceptional.

THREE STOUGHTON WORM DRIVE TRUCKS

MANUFACTURE of a series of three power trucks has been begun by the Stoughton Wagon Co., Stoughton, Wis., a concern established in 1863, which has been extremely successful in building freight carrying and farm wagons and farm implements. It is widely known and its products have been recognized as standards. The company has an exceptionally developed plant, which is equipped with high grade tools and machinery, and it has its own foundry and general machine shops. The company has capital and surplus of more than \$1,000,000.

The company has entered the power vehicle industry under unusually favorable circumstances and it proposes to produce machines that will be highest quality. It not only has ample financial resources, a factory with adequate facilities for production, but its organization includes two graduates from the University of Wisconsin, one mechanical and the other electrical, one of whom has designed a truck that is well known and is recognized as having especial qualities mechanically.

The officials of the company are F. J. Veal, president; Henry Beattie, vice president; M. M. J. Veal, treasurer, and W. C. Regelmeyer, secretary. The company is now developing a sales organization throughout the country, and this will be perfected as rapidly as is possible.

Series of Three Worm Drive Chassis.

The trucks will bear the trade name Stoughton and the series will consist of three load capacities, these being 1½, two and three tons. These will be built to a standard design and the only variance will be the dimensions of the components. The machines will be constructed of the best of units, all of which are produced by specialists, and are known as standards of the automotive industry. The design has been very carefully worked out and much care has been taken to perfect the assembly details.

Practically all wearing parts are oversized to obtain long endurance and unusual factors of safety; the moving contacting parts are, so far as is possible, fully enclosed; the means for lubrication have been studied to insure adequacy of supply, and the design has been simplified and made very accessible to insure attention and to minimize labor and time required for adjustment and maintenance.

The trucks are being produced in two buildings erected especially for this work and the progressive method of assembly has been adopted. The construction units include Waukesha engines, equipped with Eisemann magnetos and Stromberg carburetors; Waukesha governors, Brown-Lipe multiple disc clutches, Brown-Lipe selective sliding gear transmission gearsets, Smith frames, Sheldon springs, Sheldon axles, Goodyear tires, Thermoid flexible joints, specially designed radius rods and brake equalizers and Brown wick oilers. Besides these the trucks are equipped with radiators

that are built to a Stoughton design and are mounted in a manner to protect them; the radius rods are a type that was developed exclusively for these chassis, and the efficiency of brake action is insured by an equalizer of unusual construction.

Equipment Is Very Complete.

Whatever will improve the handling of the machines has been adopted. For instance, all the magnetos are fitted with impulse starters, so that the drivers can be certain of easy starting so long as the ignition system itself is functioning, no matter what the temperature. This is equipment that is usually supplied only with the largest trucks. At order the chassis can be equipped with the Eisemann magneto-generator, a unit that will supply current for ignition and for lighting, each independent of the other, should there be need of electric lights. These instruments are so built that the generator can be removed and the mag-

cast in two sections from copper aluminum alloy and the lower section contains the oil reservoir. The crankshaft is a three-journal type of large diameter and the camshaft is a single piece steel drop forging with the cams integral. The valves are a split washer taper type with case hardened ends.

The engine is lubricated by a positive force feed system so that there is always adequate lubricity, no matter what the angle of inclination. The oil is drawn from the reservoir by a geared pump and forced to all parts of the engine. The engine is cooled by a circulation of water forced through the cylinder jacket by a positively driven centrifugal pump and through a finned tube cooling section of a radiator of Stoughton design and construction. The connections between the water jacket and the radiator are flexible to insure protection against chassis distortion and misalignment. The radiator is supported by two cantilever springs



Stoughton Three-Ton Standard Chassis Equipped with Express Body and Enclosed Cub and Pneumatic Tires.

neto continued in use, so that should repair of the generator be necessary the truck can be continued in service.

The Stoughton trucks are specified as model B, 1½ tons; model D, two tons, and model E, three tons, which are listed at \$2200, \$2600 and \$3000 in the order given. In the brief description appended the model B truck will be specifically described, but the principal variance of units in the other trucks from this size will be stated where necessary.

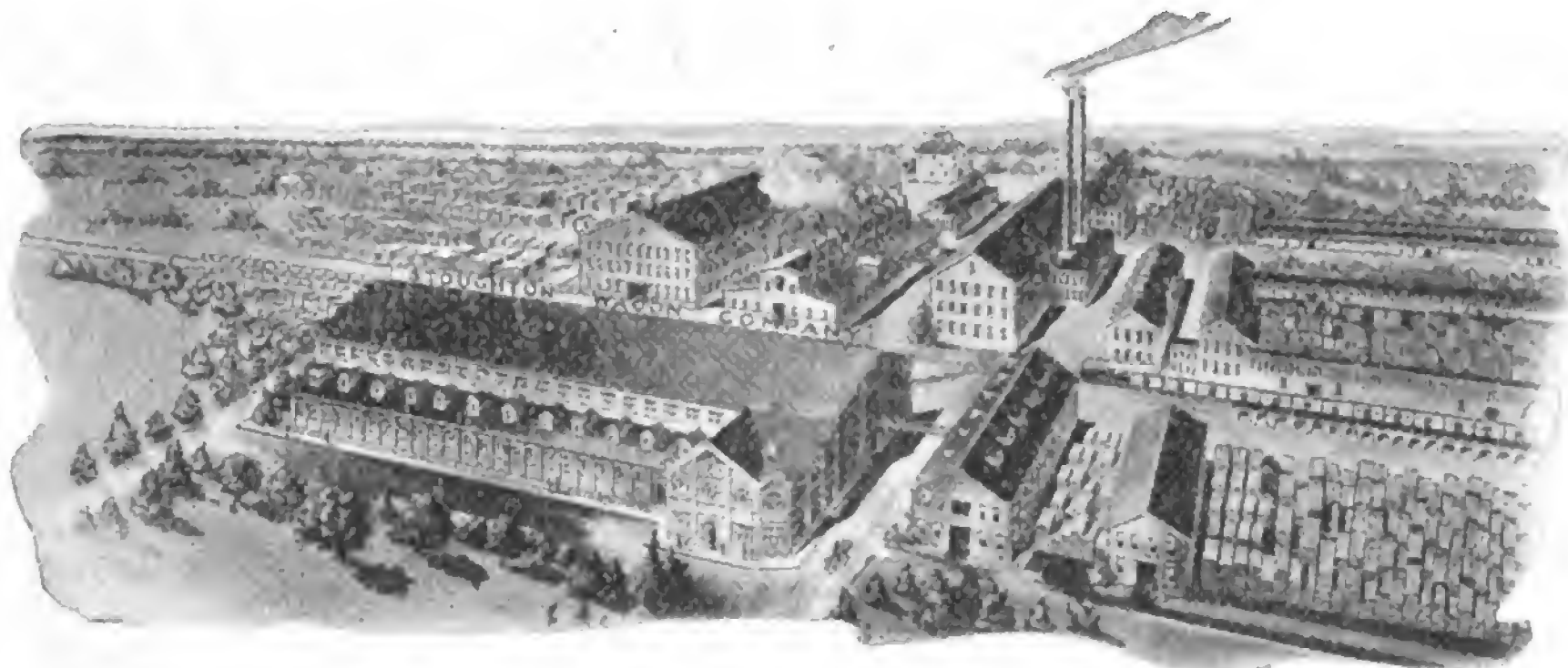
Type BUX Waukesha Engine.

The engine is a type BUX Waukesha, a four-cylinder, four-cycle, water cooled, L-head type, having cylinder bore of 3¾ inches and stroke of 5¼ inches, which is rated by the S. A. E. formula at 22.50 horsepower. The builder of this engine claims that it will develop power much in excess of this rating. The engine is a new type developed for truck construction and the cylinders are cast en bloc with the water jacket integral and the head a separate unit. The crankcase is

mounted on top of the chassis frame to prevent effect of road shock and side strain, and there are helical springs under the heads of the bolts securing the radiator to the springs. The radiator top and bottom tanks are cast and the upper tank is finned. The tubes of the cooling section are oval. The radiator can be quickly disassembled and assembled when cleaning or repair is necessary. Claim is made that with the construction and suspension the radiator is practically leak proof. Radiation is promoted by an 18-inch fan mounted on ball bearings on an adjustable bracket that is driven by a wide, flat belt.

Auxiliaries Are High Grade Units.

The engine is equipped with an Eisemann high-tension magneto, a water proof type, with manual control spark, with impulse starter, and when desired an Eisemann magneto-generator with automatic voltage control can be installed to generate current for electric lighting, which will afford constant brilliancy of



The Plant of the Stoughton Wagon Co., Stoughton, Wis., Which Is to Be Given Over to the Production of a Series of Three Worm Drive Trucks.

lamps over a wide range of engine speed. The carburetor is a model M Stromberg, and the fuel is supplied from a 20-gallon tank located under the driver's seat that has a specially large water trap. The engine is governed by a standard type centrifugal Waukesha governor that is claimed to have especial efficiency, being regulated to 18 miles an hour or 1200 revolutions a minute.

The engine is combined in a unit power plant with the clutch and transmission gearset and it is mounted at three points, the rear support arms, which are integral with the engine crankcase, being slotted so that there may be longitudinal movement of the bolts in the slots in the event of the chassis frame weaving, to insure against cramping stresses.

The clutch is a dry disc construction, enclosed in the bell housing, that is claimed to be practically self-compensating and which requires little attention and infrequent lubrication. The engagement is said to be even and positive. The selective sliding transmission gearset has three forward speed ratios and reverse, the reductions being 1.68:1 and 4:1 in second and third respectively, and 4.35:1 in reverse.

Special Mounting of Drive Shaft.

The drive shaft is in three sections, the short center section being supported on a double Timken bearing mounted in a bracket secured to a heavy frame cross member, with Thermoid flexible disc joints at the ends of the forward and rear sections, there being four of these joints in all. The Timken bearing is adjustable. With this construction there is no need for joint lubrication.

The joint at the rear end of the rear shaft section is coupled to the worm shaft of a Sheldon worm shaft and worm wheel axle, this being a semi-floating construction with the worm shaft, worm wheel and differential gearset mounted on annular ball bearings. The worm shaft, worm wheel and differential gearset may be removed as a unit from the axle, by taking off the cover plate of the bowl of the single-piece axle housing. The entire axle is lubricated by the splash of the worm wheel in a pool of oil in the axle housing. The front axle is a steel drop forged I section with heavy steering knuckles and spindles fitted with roller bearings.

The frame is pressed steel channel section, 5½ inches wide with four-inch

webs 210 inches long, this affording a wheelbase of 140½ inches and a loading space 124 inches length, with four cross members, strongly gusseted and well riveted. It is designed to be flexible under extreme stresses. It is suspended on semi-elliptic springs, the front set of eight leaves, 40 inches long and 2¼ inches width, and the rear set of 11 leaves, 50 inches long and 2½ inches width. The spring bolts are extra size, hardened and ground, and the shackles and hangers are bushed with bronze. These are lubricated with Brown wick oilers. The rear springs are shackled at both ends and the driving and braking stresses are taken by I section radius rods that are secured to cast steel plates at the axle and fit into bronze bushed bores in the hangers.

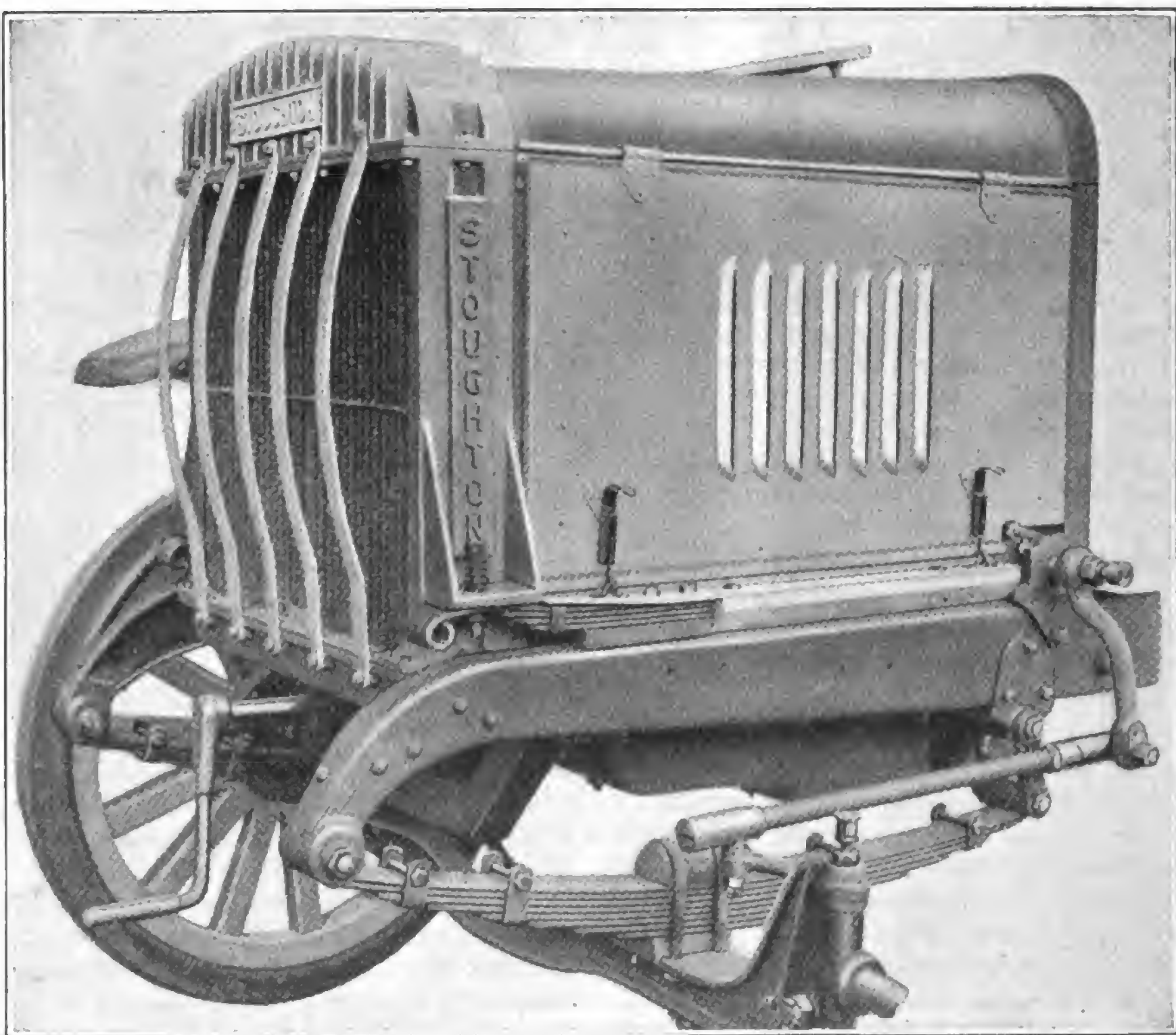
The wheels are wood, artillery type, and these are shod with 36 by 3½-inch solid tires forward and 36 by five-inch solid tires at the rear.

The control is by the conventional foot

pedals and hand levers. The steering column is a semi-irreversible type at the left side. The steering gear is fully accessible and adjustable. The brakes are internal expanding within drums 18 inches diameter on the rear wheels, the shoes of the service brake being 3½ inches wide and those of the emergency brake 2¼ inches wide. Both brakes are double-acting and are fitted with rods the same length as the radius rods, and with an equalizer that is claimed to be especially effective.

The detail given applies to the two and the three-ton chassis generally, but the engine of the former has cylinder bore of four inches and stroke of 5½ inches, and is rated by the S. A. E. formula at 25.60 horsepower, and the engine of the three-ton chassis has cylinder bore of 4¼ inches and stroke of 5¼ inches, and is rated at 28.90 horsepower. The frame of the three-ton chassis is 6½ inches wide, with four-inch webs, and it is 222 inches long, this allowing a 155-inch wheelbase. The axles and wheels of both chassis are heavier and the three-ton chassis has a transmission gearset with four forward speed ratios. The wheels of the two-ton chassis are shod with 36 by four-inch tires forward and 36 by seven-inch rear, and the three-ton chassis wheels have 36 by four-inch tires forward and 36 by eight-inch rear. Pneumatic tires are fitted at extra cost.

The chassis are sold with engine hoods with removable sides and special adjustable ventilating doors in the top members; drivers' seats, front fenders and extra long running boards, oil dash and tail lamps, kit of tools, warning signal mounted under the footboard, jack and special wrenches.



Forward End of Stoughton Chassis, with Left Wheel Removed to Show the Axle Construction, the Spring Suspension, the Outside Steering Gear, the Spring Support of the Radiator and the Special Type Engine Hood.

PIERCE TRUCK ENGINE GOVERNORS

ALL internal explosion engines create power by speed, and this power is developed from zero to maximum, after which there is a droop or lessening of power production. This can usually be traced on charts of engine capacity. While there is a considerable range obtainable in engine speed there is a point that may be referred to as the limit of normal functioning, for when driven in excess of this abnormal wear will develop.

Theoretically engines should be driven as nearly at constant speed as is possible. The governing factors are cooling efficiency, character of lubrication, fuel consumption and the general design. Were truck or tractor engines securely anchored on bases where they would not be subjected to vibratory stresses they could be driven faster and for far longer periods of time with little if any deterioration than if installed in chassis frames, either sprung or unsprung.

Racing an engine is driving it so fast that it will wear excessively. To prevent racing so far as possible an engine should have a load, which will minimize vibration. The expert driver will not drive an engine fast, but when the load is more than can be carried with what is known as a constant speed the gear ratio is changed so that the power is applied slower. To illustrate, assume an engine with a maximum of 1000 revolutions, which is the limit for fuel economy and mechanical endurance. If the load is greater than the engine can carry the gear ratio can be changed so that, with the same number of revolutions the movement of the vehicle is reduced either 25, 50 or 75 per cent. There will be no increase of fuel consumption, the engine will turn the same number of revolutions and the work will be equally well done, but more time will be required for moving a given distance.

Misuse of a Gear Reduction.

Automobile vehicles are usually fitted with power transmission gearsets that are designed to afford several gear ratios, so that when the load is increased the engine power is applied slower. Theoretically the speed of the engine should not be increased when gear ratios are changed, but nearly every driver will force the power plant simply from the fact that he does not understand that applying the power slower has necessarily decreased the vehicle speed. With rare exceptions drivers will race their engines, seemingly believing that greater engine speed is necessary.

By this is meant that if an engine is running 1000 revolutions a minute and the gearset is changed to the second ratio, instead of continuing at the same speed, which will mean increase of power to whatever ratio the reduction may be, the engine is forced to perhaps 1500 revolutions, greatly increasing the fuel and lubricant consumption and causing more or less deterioration of every moving part. At 1000 revolutions the vehicle would move somewhat slower, but none the less positively.

Many Manufacturers Provide Governors.

Normal engine speed is expected and there must be maximum power development whenever there is need, but the damaging effect of acceleration, through intent, incompetency or carelessness, is such that means of automatic regulation have been found necessary, and today 153 different manufacturers of engines, trucks or tractors have adopted Pierce governors as regular equipment. Claim is made for this instrument that it will regulate the speed of the engine, but will not restrict the use of the power developed.

Fast driving is probably the cause for the most of the wrecks and collision accidents, and limitation of vehicle speed will obviate what means expense and loss of service, for trucks are primarily used for work, and unless in use they quickly become extremely expensive.

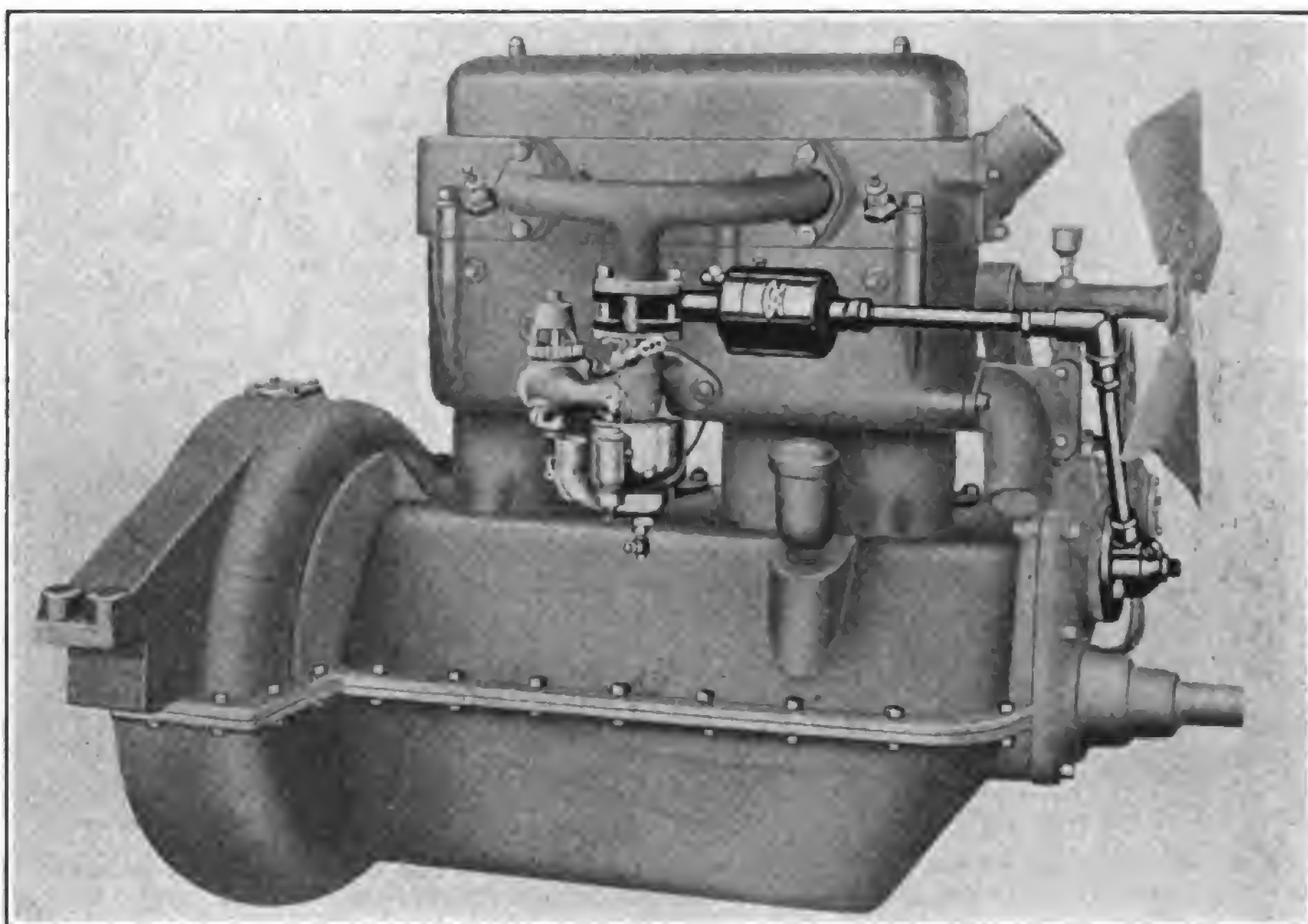
But there is another factor. Truck

pets and valves, and even if restoration can be made material expense is necessary. The function of the governor is to regulate the supply of fuel to the engine so that it will receive all that is required for full power, but only what is needed.

This regulation is without the change of the throttle, and while efficiency is increased the expense of operation is minimized.

What has been stated applies to tractors, but in addition to this tractor engines have widely varying loads, and a steady speed cannot be maintained by hand control. The engine may stall under extreme load and race when the tractor is stopped. The governor automatically regulates any acceleration of the engine beyond the predetermined maximum.

Statement is made that a governor must be dependable in practically all conditions of use, and as the power creat-



A Pierce Governor Installed on a Truck Engine. Driven by a Pair of Shafts and Bevel Gears from the Timing Gearset.

springs are necessarily built to absorb shocks when heavily loaded, and when a vehicle is driven light the road shocks are not absorbed and the vibratory stresses affect every metal part, loosening nuts, bolts and screws, wearing rivets and rivet holes, and eventually setting up metal fatigue that means breakage.

Results of Vibratory Stresses.

The engine when driven fast similarly affects the chassis, and the combination of engine and road vibrations is doubly destructive. Statement is made by competent engineers that more wear results from driving a truck light at a given speed on a given surface than when loaded. This is due to the fact that the springs will not absorb the road shocks. But racing the engine causes wear of the engine bearings, shafts, gears, cylinders, pistons, piston rings, cams, valve tap-

ing the centrifugal force in the Pierce governor is derived from the engine itself, the instrument is practically an integral part of the engine, responsive to its variations and compensating the fuel delivered so that there is no excess of speed and a more nearly uniform development of power.

Control by Centrifugal Force.

The instrument itself is exceedingly simple. The only rotating part of the governor is the spider carrying the two weights, which is mounted on ball bearings and operates in an oil bath. The spider is practically wear proof and nothing can fail. There are several qualities of design that are claimed by the manufacturer to suit it for truck and tractor engine control. For instance, to install it the carburetor need be dropped the measurement of the bore of the intake manifold, or less than half what is re-

quired for other governors, and for this reason the carburetor is close to the cylinder and there can be no excessive condensation of fuel gas.

The carburetor butterfly valve is not connected with the governor and it need not be removed, so that there is absolute control by the driver at any speed at which the governor is set. All the flanges of the governor valve box are standard S. A. E. dimensions, unless specially ordered, so that special adapters are not required and the possibility of air leaks is minimized. The governor will function perfectly at any angle in relation to the engine. Operation is not affected by atmospheric temperature or humidity and it is not sluggish in cold weather. The intake manifold is not obstructed, so there can be no variation of fuel supply and consequent condensation. The valve is a butterfly type, the same as is used in nearly all carburetors. This valve cannot fail to function from expansion or contraction or from dust drawn through the air intake. Should the governor be

the valve variations being dependent upon the engine load, so that the number of revolutions will be practically constant.

This valve is actuated by what is known as the flyball principle. On a special spider mounted on ball bearings are two weights, so pivoted that as their centrifugal velocity increases they are swung outward, causing a lever at the base of the weights to force a plunger forward that moves the butterfly valve. The plunger is forced against a spring calibrated to a standard pressure, so that when there is reduction of engine speed the velocity of the weights is decreased and the valve is automatically opened and more fuel is admitted to the engine cylinders.

Can Be Set to Any Speed Maximum.

The governor is lubricated through an oil cup on the governor case and the two weights splash oil to all moving parts. The action of the governor is positive and adjustment may be made easily. As the governor case is dust and water proof

published by the Pierce Governor Co., which deals with the automatic control of engines in general. It contains information of material value to manufacturers, dealers, owners and drivers of automobile vehicles. Copies of this booklet may be obtained free by addressing the Pierce Governor Co., Anderson, Ind.

MOTOR VEHICLES IN THE ISLE OF PINES.

Consul Bardel at Nueva Gerona, Isle of Pines, reports that road conditions there are particularly favorable for the use of motor vehicles, as there are no grades and the roads are covered with natural nodular gravel. This permits the use of very light cars for passenger service, and the smaller motor trucks also give the most economical service. The commercial cars generally used are of one-ton capacity, although there are a few of heavier models, even up to five tons.

There are at present about 175 passenger cars and 40 motor trucks in use in the Isle of Pines. Consul Bardel emphasizes the fact that makers of automobiles should take care that accessories and parts are placed in stock with their agents on the island.

A BIG DAY'S RECORD ILLUSTRATED.

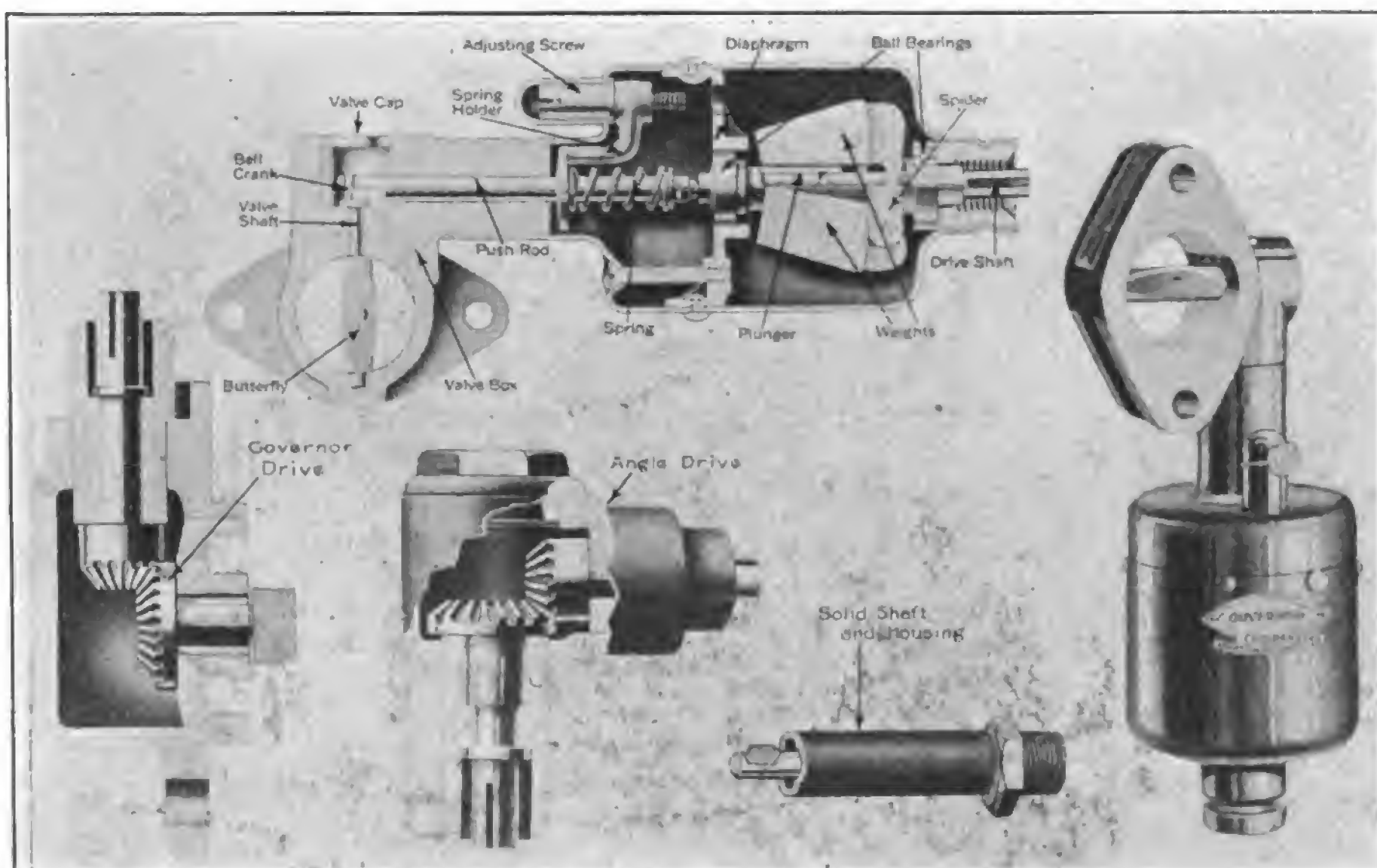
The February issue of "Horse Sense," a monthly publication of the Traffic Motor Truck Co., St. Louis, Mo., contains an illustration showing Sales Manager H. H. Hawke standing before a large blackboard on which is recorded the result of the sales conference at the Traffic factory, when orders were given for Traffic trucks to the value of \$22,000,000 in 22 minutes, which is claimed to be the largest sale of power vehicles ever made in so brief a period. In addition the number contains a series of articles dealing with the service of Traffic trucks that are decidedly interesting.

GOODYEAR EXHIBIT AT PARIS.

The Goodyear Tire & Rubber Co., Akron, O., planned to have a representative exhibit of its products direct from the factory at the recent automobile show in Paris, France, but through transportation difficulties it failed to arrive on time, whereupon H. M. Parker, assistant manager of the European division of the Goodyear company, borrowed pneumatic, solid and motorcycle tires from the United States Army of Occupation and from one of the French manufacturers, with the result that the Goodyear company had a striking exhibition at the show.

BALANCED VALVE MOTOR CO.

The Balanced Valve Motor Co. has been formed at Milwaukee, Wis., for the purpose of manufacturing a new type of four-cylinder engine for automobiles, trucks and tractors. Capital, \$3,000,000. Officers: President, W. M. Baumheckel; vice president, E. R. Menz; treasurer, E. W. Eberhardt; secretary, G. E. Pieper.



The Pierce Governor Complete, in Cross Section to Show the Controlling Mechanism, and the Different Forms of Solid Shaft and Bevel Gear Drive.

damaged or broken the valve will open fully so that the throttle can be hand operated, which is contrary to results with some governors in the event of failure. The action of the governor is positive and the speed regulation uniform, as the governor is driven direct from the engine by an enclosed shaft.

May Be in One of Three Locations.

The valve box of the governor is mounted between the carburetor and the intake manifold, between the carburetor and the cylinder block, or between the intake manifold and the carburetor. It may be connected by either a solid or flexible steel drive shaft, enclosed in a housing. Nearly every American engine now built is designed with such connections that Pierce governors can be installed.

In the governor valve box is a butterfly valve that normally is so positioned that the flow of gas is not obstructed, and when the maximum speed setting is reached this valve is turned to reduce the fuel to what will maintain this speed,

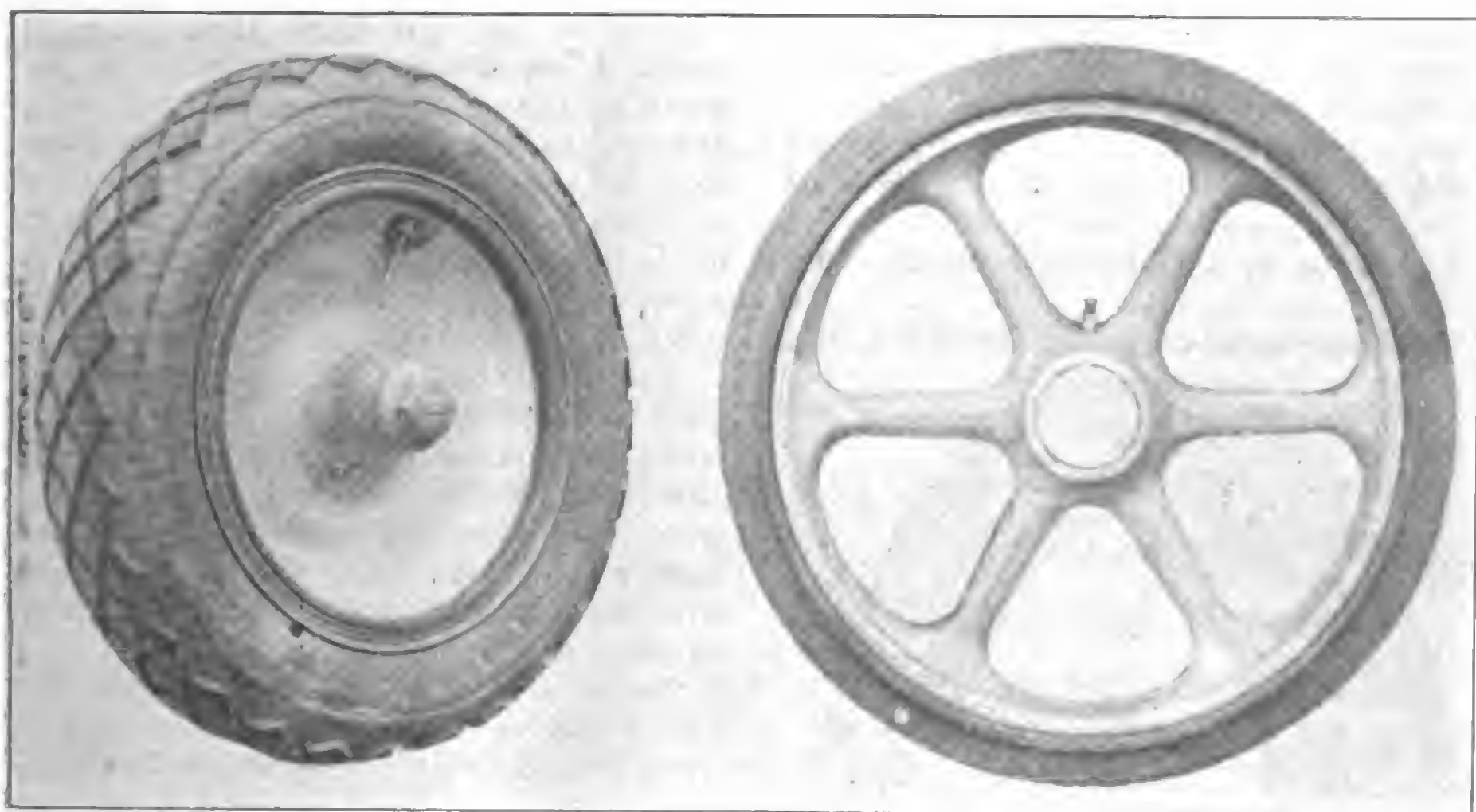
there is little probability of wear with adequate lubrication. The adjusting screw can be sealed so that adjustment cannot be made without the knowledge of the owner.

The governors are built with different sizes and types of valve boxes to fit different engines and the driving mechanism must also vary. The usual maximum speed is from 750 to 1000 revolutions a minute, and to maintain this speed angle drives with bevel gears of varying ratios are provided, so that regardless of the engine speed desired the governor can be made to operate at its highest efficiency.

As the location of accessories and the design of engines may be such that these governors cannot be installed in trucks or tractors, the governors are sold only to manufacturers of internal explosion engines, trucks or tractors who can control the designs of the machines and provide for the installation during production.

A rather pretentious booklet has been

LYNITE ONE-PIECE CAST TRUCK WHEELS



Two Types of Lynite One-Piece Wheels: At Left, a Disc Truck Wheel with Pneumatic Tire; at Right, a Spoke Wheel with Solid Tire.

ENGINEERING research directed toward the development of power vehicle wheels has been undertaken by very few as compared with study made with the object of perfecting other construction units, and while material progress is evidenced in types and forms, none of these is recognized as the standard of the industry.

Much interest attaches to the development of aluminum wheels for trucks and cars by the Aluminum Castings Co., a concern claiming to be the world's largest producer of aluminum castings under the trade name of Lynite. Statement is made that extensive road and laboratory tests have established that aluminum wheels will endure stresses as well as wood, wire or steel types, and the reduction of unsprung weight is maintained to be a very important factor for operating economies, among which are increase of the pay load, lessened repairs, minimized wear of tires and easier riding.

The wheel is a one-piece casting made from the new Lynite No. 145, an alloy that was recently developed in the Lynite laboratories after years of research that has a specific gravity of but 2.9, a tensile strength of 27,500 pounds the square inch and an elongation in two inches of 4.5 per cent. It is regarded as the strongest aluminum casting alloy yet produced.

Effect of Unsprung Weight.

As a rule the attention given by the engineer to the wheels of a vehicle is probably less than to any other construction unit, but the importance of reducing the weight below the springs is generally realized and designs evidence that this factor is being carefully studied. Obviously, when a vehicle is moving over an irregular road surface tire adhesion is lost immediately when a wheel strikes an obstruction. In the event that one of the rear wheels loses traction it is free to turn at any speed that the engine may induce, which may be any abnormal rate.

When the wheel again contacts with

the road surface, and before it has complete adhesion, there is slippage that is dependent upon several factors, such as the weight, the speed and the condition of the tires and the road. While the rubber shoe is yielding and resilient there is necessarily some grinding effect and the cost of tires is so large an item of operating expense that attention can justly be directed toward minimizing this wear.

There might naturally be assumption that with large unsprung weight, such as is found in so-called carry-all types with heavy wheels and axles, there would be greater adhesion than were these units lighter, but further investigation establishes the fact that this result is not possible, and this can be proven by experiment with a power vehicle having any standard form of spring suspension, removing the wheels and replacing them with heavy cast iron wheels, such as are used for railroad cars.

Were the vehicle driven fast and the

wheels contacted with a road obstruction, the wheels will be thrown upward, causing compression of the springs, which will only partially absorb the shock. The shock not absorbed will be communicated to the body of the vehicle above the springs. Were the iron wheels replaced with wheels made of papier mache and the vehicle driven at the same speed and the same obstruction struck (if the wheels could endure the shock), they would be thrown upward and the springs compressed, but the shock communicated to the body would be very slight, as the body is so much heavier than the wheels that the springs would react quickly and force the wheels down instead of lifting the body.

By this is meant that the lighter wheels will hold the road better than heavy wheels, the tire slippage will be lessened, the machine will ride easier and the vibration will be greatly decreased. As Lynite wheels weigh half the weight of other metal the advantage is apparent. Claim is made that sets of Lynite wheels have been used in tests on five or six different standard truck chassis and the results have thus far been very satisfactory. On one truck a set of tires was installed more than four years ago and the machine has been driven an average of 30 miles daily on give and take roads, and the tires have not as yet reached a condition of un-serviceability.

Lynite wheels are either spoked or disc type and the metal can be highly finished. The lightness is a considerable factor in wheel changing, either in the garage or on the road. As the Lynite wheel will not rust, a tire cannot "freeze" to the rim and removal can always be easily and quickly done. Lynite has four times the conductivity of heat of iron or steel and the diffusion of heat of the tires when the drives are for long distances without stop makes for greater tire endurance.



Truck Equipped with Webbed Disc Rear Wheels, Shod with Pneumatic Tires, the Unsprung Weight Being Greatly Reduced.

TRAILER ECONOMY IN LUMBER DISTRIBUTION.

The economies of the use of semi-trailers in lumber distribution has been very effectively demonstrated by the Hine Lumber Co., Detroit, a concern that does a considerable business in what is practically the urban section of that city. It uses a Freuhauf unit rated at $3\frac{1}{2}$ tons load capacity, and with this loads of nine tons have been hauled frequently.

The Hine company has a number of these units and the result in practical experience is that with them loads that could be hauled with trucks have been increased from 100 to 200 per cent. in weight or bulk at a cost of approximately 10 per cent., and with separate trailers that can be loaded at yard convenience and the trucks used as tractors kept moving constantly, the economy is extremely large.

The time of delivery is not increased by the use of this equipment, the service is always dependable, and there is no additional burden upon the works, all of which are material factors in successful business.

WILL ERECT GIRLS' DORMITORY.

To help relieve the congested housing conditions in the rapidly growing city of Akron, O., one of the great centers of the rubber industry of the country, the Goodyear Tire & Rubber Co. announces that it will immediately supervise the erection of a girls' dormitory to cost \$200,000. This building is planned to accommodate 175 girls and is designed to make homes for girls who are constantly coming to Akron to take positions with the Goodyear company. It is to be three stories, of brick, to be located in the Goodyear Heights community near the factory. The management of the dormitory will be vested in the social service department of the company of which Miss Clara E. Bingham is manager. The girls accommodated here will pay rent on a basis of the actual cost of maintenance by the company.

U. S. TRUCK PRODUCTION PLANS.

The United States Motor Truck Co., Covington, Ky., has announced plans to provide for an increase in production for 1920 of 200 per cent. or better, new forms of co-operation with dealers, large use of advertising space and new forms of advertising co-operation, and the production in its own factories of a great share of the material used in the trucks. Models for 1920 will range in capacity from 3000 to 12,000 pounds, and will be known as N, 3000 pounds, with Clark Celfor axle; NW, 3000 pounds, with worm drive; R, 5000 pounds, with worm drive; S, 7000 to 8000 pounds, with worm drive, and T, 10,000 to 12,000 pounds, with worm drive.

Trucks and tractors will be shown in an annex to the show of the Springfield, Ill. Automobile Dealers' Association, which will be held in the state arsenal in that city March 2-6 inclusive.

LAMBERT "TRUBLPRUF" TIRES.

A tire for which very broad claims for endurance and easy riding qualities are made is known as the Lambert "Trublpruf," of which H. W. Lambert of Akron, O., is inventor. This tire is not solid, nor is it a casing filled with a resilient composition, and it requires no air inflation as do the conventional types of pneumatic shoes.

The principle of construction is new



A Lambert "Trublpruf" Truck Tire That Has Great Resiliency and Cannot Be Damaged by Puncture.

and it is based on the use of cord belts that cannot stretch that are wound very tightly around cushions of highly elastic rubber. These belts, under high tension, are claimed to vibrate, like the strings of a violin when touched, along their entire circumference. The rubber cushion, by its resiliency, absorbs the vibrations of the belt just as air absorbs the shocks on a pneumatic tire, and the maker maintains that this absorption is so effective that the vehicle will ride very easily on extremely rough roads.

The actual functioning of the tire progressively from contact with a road obstruction to complete absorption is ex-



Section Showing the Construction of the Lambert "Trublpruf" Tire. The Letters Indicate the Cord Belts Separated by High Elastic Cushions.

plained as follows: Upon contact the cord belts are deformed by the distortion of the tread from momentum and weight, but as the cord belts cannot

stretch they are drawn more tightly against the rubber cushions along the entire circumference of the wheel. This tightening of the belts transmits the shock from them at one point to the whole of the rubber cushion, which deadens or dampens it just as the air pressure in a tube is distributed by weight or shock to all parts of the internal walls of a tire. That this action obtains is proven by the variation in the shape of the holes in the side walls of the tire.

When the tire is in moving contact with a road surface these holes change from round to elliptical under pressure and from elliptical to round as relieved from pressure. Wooden pins driven solidly into these holes are loosened and will fall out after a comparatively small number of revolutions.

These tires were invented several years ago and until recently were sold from a factory at Portland, Ore. Under the name of the Lambert Tire & Rubber Co., the manufacturer engaged in production at Akron, O., where a plant was established. The demand for the tires has greatly increased and this has necessitated working day and night forces of employees, but additions to the works that were completed about Feb. 1 will increase production about 100 per cent.

LABORATORY EXAMINATION OF ROAD BUILDING MATERIAL.

A special laboratory devoted to the microscopic examination and classification of road building rocks, maintained by the Bureau of Public Roads, United States Department of Agriculture, has examined 686 samples of material during the past year, according to the chief of the bureau. This represents a considerable increase over the preceding year and shows the pronounced interest in matters relating to highway construction. Of the samples examined, 249 were rock, 41 slag, 151 gravel, 189 sand, 45 clay and 11 miscellaneous.

MARKET FOR MOTOR CARS IN PHILIPPINES.

American motor vehicles continue to predominate in the Philippine market, according to a compilation recently made by the United States Bureau of Foreign and Domestic Commerce. The total number of trucks registered in 1918 was 567, with a tonnage capacity of 1052 and a passenger capacity of 6345. Due to the lack of railroads and the need to transport agricultural products, motor trucks are beginning to play an important part in the country's commerce.

WILL FEATURE TRACTORS AT DEADWOOD SHOW.

Farm tractors and trucks will be a feature of the Black Hills Auto-Tractor show, which will take place at Deadwood, S. D., Feb. 23-26, in the city auditorium. This exhibition is an annual event and with increased floor space the management believes that it will be the largest ever organized in that section of the Northwest.

Highway Snow Blockade Fought with Power Apparatus

Road and Farm Tractors and Plows Used to Break Roads in New England with Much Success—Municipal Needs Develop Some Unusual Types of Melting and Removing Equipment.

PREPAREDNESS is necessary if highway transportation is to continue without serious retardation, and this is applied specifically to clearing roads that are obstructed with snow. By this is meant that no matter what the power of trucks, unless highways are broken traffic cannot continue in anything like the normal volume, and the cost of haulage is enormously increased.

The experience of approximately a score of years had seemingly demonstrated to the industrial and commercial enterprises of the New England and North Atlantic coast states that power trucks could be used in practically any conditions that might be met with. But conclusions that were apparently well founded have been overturned by a winter that has not been paralleled for more than a half century, and the end is not yet.

Since the beginning of the year snow storms have followed in quick succession until a combination of snow and ice has accumulated to such depth that despite the efforts of every available agency a blockade of roads such as never before was known has existed for more than three weeks at this writing in New England and New York.

The depth of frost in the ground is not great, but the earth is covered with a thick coating of ice, and on this snow has fallen, and alternate sleet and rain and thawing weather has reduced this

practically to snow ice. In the largest cities the work of clearing the principal business streets is now progressing. The steam and trolley roads are still digging out the tracks. The steam railroads have not succeeded in more than clearing the main lines and are accepting only fuel and perishable freights. In many sections the supplies of fuel and food are low. Mills and factories have been compelled to suspend operations because of shortage of fuel.

Traffic Confined to Car Tracks.

Where trolley tracks have been cleared the snow has been swept into the roadways and these have been piled so high that traffic has been confined to the tracks. This applies to the main streets and highways between commercial centers. Side streets and roads have not been broken in many instances. Steam and trolley lines have been operated hit or miss. People have been compelled to walk long distances to and from employment, and thousands of concerns

have been more or less crippled by inability of employees to reach them.

While the fall of snow and rain since the first of the year has been unprecedented, and the combination with sufficient warmth to reduce the snow to ice seldom if ever paralleled, the obstruction of the streets and roads is in no small part due to the lack of equipment by states, counties, cities, towns and the public service corporations for breaking and clearing the highways. There are those who may maintain that such a condition might be experienced but once in a lifetime, that the expense of acquiring and maintaining plows and other apparatus is not justified by the very infrequent need for them; that such emergencies can only be met with what resources may be available.

All of this may appear reasonable, but the fact remains that practically every business interest in an area having a population of 20,000,000, and nearly every person employed, has suffered materially

because of the lack of transportation, and this loss in the aggregate is no doubt far greater than the cost of equipment that would be practical for at least a decade and probably a much longer period.

What this loss will eventually be cannot be forecasted, for there may be disasters when the snow has begun to melt and rivers and streams will be filled to overflowing, and gutters and surface



Fisk Rubber Co. Road Tractor Plow Used to Clear Highway Between Chicopee Falls and Spencer, Mass.: Above, Cutting a "Turnout" for Vehicles to Pass; at Left, Bucking the Deep Snow by "Charging" the Drifts; at Right, the Clear Path Made by the Outfit.



Holt Caterpillar Tractor and Drag Plow Used for Breaking the Grounds of the Massachusetts Institute of Technology at Cambridge, Mass., and Some of the Streets of the City.

waterways must be cleaned to dispose of it. But the main proposition is that in a real emergency the equipment that should have been in readiness is not available or obtainable, and without machinery or apparatus the people are helpless.

There are those who may ask what might be provided to break highways covered with two feet or more of snow and drifted to four, five or six times that depth; what means could be in readiness to dispose of an enormous volume of snow and ice. They may instance that the roads have been so filled that powerful trucks could not be forced through them; that clearing the trolley tracks necessitated piling the snow and ice to such depths in the other parts of the roads that no vehicles could be driven through, and only cartage could clear them; that only large gangs of workers and almost numberless carts and trucks would be required for snow removal.

Business Houses and Citizens Help.

When business concerns will set their trucks, carts and men at work clearing railroad freight yards; when citizens will give their time and labor hard with whatever tools can be obtained to clear streets and gutters to obtain drainage to sewers, in addition to the resources of the public service corporations and the municipalities, the need may be regarded as extremely urgent. And yet this was done in all parts of New England and New York state, even in New York City, where the municipal resources are assumed to be larger and better organized than in any other section of the country.

In any statement concerning the conditions there are those who will point to the fact that during the winter of 1918-19 there were but several heavy falls of snow, and these soon thawed, there not being a sufficient accumulation at any one time to necessitate much road breaking, save in the extreme northern section of the country, which has been so badly blockaded by snow this year.

There can be no question that with in-

dustry and business more than ever dependent upon highway transportation, provision should be made for breaking the snow in the roads with truck and tractor plows. Such road clearing is possible and practical. Well built snow plows are comparatively inexpensive and can be utilized for years. So the actual investment in equipment ought not to be beyond the resources of any community.

Trucks A-Plenty, But No Plows.

Large trucks, such as would be powerful enough to push plows through deep snow are generally required for construction and other work by towns and cities, and occasionally by counties. Where farm tractors are available these can be utilized for clearing roads, and there is no doubt that these machines, especially those of the tracklaying type, have sufficient power for any work that could be required of them.

The trucks can be so adapted that snow plows can be attached in comparatively short time. There need be no change in the body equipment, and if the machines are to be used for snow

removal during winter months after adaptation in the autumn there should be no reason for other work save attaching and detaching the plows when these are needed.

Chicago's Fleet of Truck Plows.

An illustration of the possibilities with trucks fitted with snow plows is shown in an accompanying illustration of a fleet of seven machines in the service of the Bureau of Streets of Chicago. These are all large Mack trucks, equipped with dump bodies that are raised and lowered by power, and they can be used the year round for haulage. The snow plows are demountable and are kept at convenient yards until wanted.

Of course the number of trucks that a city can use in its various departments would seem to be the limit of preparedness for clearing the streets. No doubt but a part of the trucks owned by a city or town would be available, but other machines could be obtained were there sufficient snow plows. Now the work is limited by the plows obtainable, and the cities and towns that have perhaps one where they should have a dozen or more cannot clear the streets and roads. Were there plows so designed that they could be practically interchangeable with reference to mounting them on truck chassis, all the trucks necessary could probably be procured.

Breaking Roads Always Begun Late.

Clearing snow from highways should be begun with the start of a storm, so that there will be no accumulation to a depth that will cause loss of traction. The path should be a width that will allow passage of vehicles in either direction. In streets and roads in which are car tracks the snow should be swept to one side, so that there will be one clear vehicle path besides the trackage, which will insure against blockade. If the work is not started until after a storm then the accumulation may be such that breaking can be done only with great difficulty and at far greater expense, and the public, which is entitled to the use of the streets,



McNaarch Tracklaying Tractor Used on Farm of Arthur Whitins at Whitins, Mass., Breaking Roads in Village—This Machine Hauled Three Tons on Sleigh Over Unbroken Highway to Make Emergency Delivery at Pawtucket, R. I.



Utilitor Tractor, Equipped with an A-Type Plow, Found Very Practical for General Walk and Road Clearing, Handled by One Man.

must endure the increased cost and the inconvenience and delays.

The fleet of snow plows shown in the illustration is very small for all the snow removal that is necessary in a city having the street mileage of Chicago, but investment in several hundred plows, which could be used whenever snow fell with city and rented trucks and tractors, would be a very practical insurance by Chicago against snow blockaded streets.

Clearing 40 Miles of Country Highway.

Those who believe that country highways cannot be kept clear with truck or tractor plows have only to learn in outline the work done by a tractor plow owned by the Fisk Rubber Co., which has been used for nearly two months. The accompanying illustrations were made on the highway between Chicopee Falls and Spencer, Mass., a distance of 40 miles, that has been broken so that traffic can continue between Worcester, Springfield and Chicopee Falls.

This road is the main thoroughfare between Boston and Albany, and at Springfield it connects with the road south through Hartford and New Haven. Chicopee Falls is eight miles north of Spring-

field.

The Fisk company undertook to keep the road free. The equipment consists of a Knox tractor that carries a load of $2\frac{1}{2}$ tons, on which is mounted a plow with a blade that sweeps a path with the snow at one side, it having a diagonal setting across the road. After each of two recent snow storms the machine was worked day and night, with two shifts of three men, and it cut swaths of 20 feet width between Chicopee and Spencer.

Some Cutting Through Ice Banks.

In the hills surrounding the Brookfields the road was filled with snow drifts and frequently the snow piled at the road sides was higher than the top of the radiator. The second storm was followed by a thaw and by low temperature that froze the water saturated snow into ice. With drifts as high as the fences the work done with the plow was remarkable. At times progress was limited to backing and charging the ice, the cut being two or three feet each charge. Through such ice single width paths were cut, but broad turnouts were made either side so that there would be no

limitation of traffic as would have been necessary with a narrow track.

The highway was kept clear and traffic has been continuous, but through private enterprise instead of by cooperative work by the counties and cities and towns through which the road is built. The tractor is practical equipment and clearing highways is but one of the many uses that can be made of it.

One can understand that if roads are to be used they must be kept passable, and when plows are obtainable there is always sufficient power vehicles to work them to the limit. But unless plows are in readiness there will always be snow blockades following heavy storms.

Cutting Paths with Tractors.

The experience with farm tractors breaking highways has been surprisingly satisfactory, and where the snow has been deep and the drifts heavy the tracklaying tractors have been proven extremely practical. An exceedingly interesting demonstration was made at the Massachusetts Institute of Technology, Cambridge, where a Holt Caterpillar owned by the college was utilized for plowing the grounds. An A-shape plow, well weighted, was towed by the tractor and the paths were cut to the ice covering the walks and drives, the only essential being to have the plow so loaded that it would cut through and not slide over the snow and ice. The machine could be driven practically anywhere, consolidating the snow in its path and then cutting through this packed snow, considerably lessening the bulk as it was swept to either side by the plow. This tractor was used in streets in Cambridge and was found superior to any other form of equipment available.

An outfit that was found especially useful for clearing walks and paths, and which was used to a limited extent in roads, was adapted by the owner of a Utilitor, a small tractor built by the Midwest Engine Co. of Indianapolis. This little machine, which is guided by the driver by a lever having a cross-shaped handle, much like that of a lawn mower, was placed inside an A-shaped plow, and the engine at plowing speed swept the surface evenly and clean. The Utilitor and plow is well adapted for municipal



Fleet of Seven Mack Trucks Equipped with Single Blade Type Snow Plows for the Service of the Bureau of Streets of Chicago, a Demountable Equipment, That Can Be Quickly Adapted When Required.



A New Type of Apparatus, an Invention Owned by the National Snow Remover Co. of New York City, That Will Handle Nine Cubic Yards of Snow a Minute and Place It in Vehicles or at One Side, and Do the Work for Which 1000 Men Would Be Required a Day.

service, plowing sidewalks and paths, and with this one man can do much more work in a day than could be done with a horse plow.

Breaking Roads with Farm Tractor.

One of the most interesting uses made of a tractor was at Whitins, Mass., where Arthur Whitin, one of the members of the Whitin Spinning Ring Co., resides. He operates a large farm and has in its equipment a Monarch tracklaying tractor. When the roads became obstructed with snow the tractor was used to tow a snow plow all over the village and vicinity, and the roads were kept clear for traffic, no matter what the weather conditions or the depth of the drifts.

But the snow accumulated to a depth that blockaded the Worcester division of the New Haven road and because of the great difficulty of keeping the main track open the freight yards were practically filled with cars, loaded and unloaded, which could not be moved. An embargo was placed on all freight that was not fuel or perishable, and express was not accepted.

The Whitin Spinning Ring Co. wanted to make a freight shipment to Pawtucket, R. I., to the Fales & Jenks Machine Co., and the material was so badly needed by the latter that the heaviest "bob sled" pung in the village was produced and loaded with three tons of cases. To this the tractor was coupled and the outfit started for Pawtucket. The distance was approximately 22 miles. There is a trolley track through the entire highway, but this was clear only in Woonsocket and Central Falls and Pawtucket. For fully 19 miles the road was covered with snow and ice, the drifts in many places being 10 feet deep.

Car Tracks the Greatest Obstacle.

Where the car track was clear the snow was piled so high at either side that the sled had to be drawn on the track, and avoiding other vehicles was at times very difficult. Once the pung

was overturned and the tractor driver and his helper had to unload, right and re-load it, this causing a loss of several hours. But the tractor went through or over every drift and for one stretch of eight miles the road had been impassable for more than three weeks.

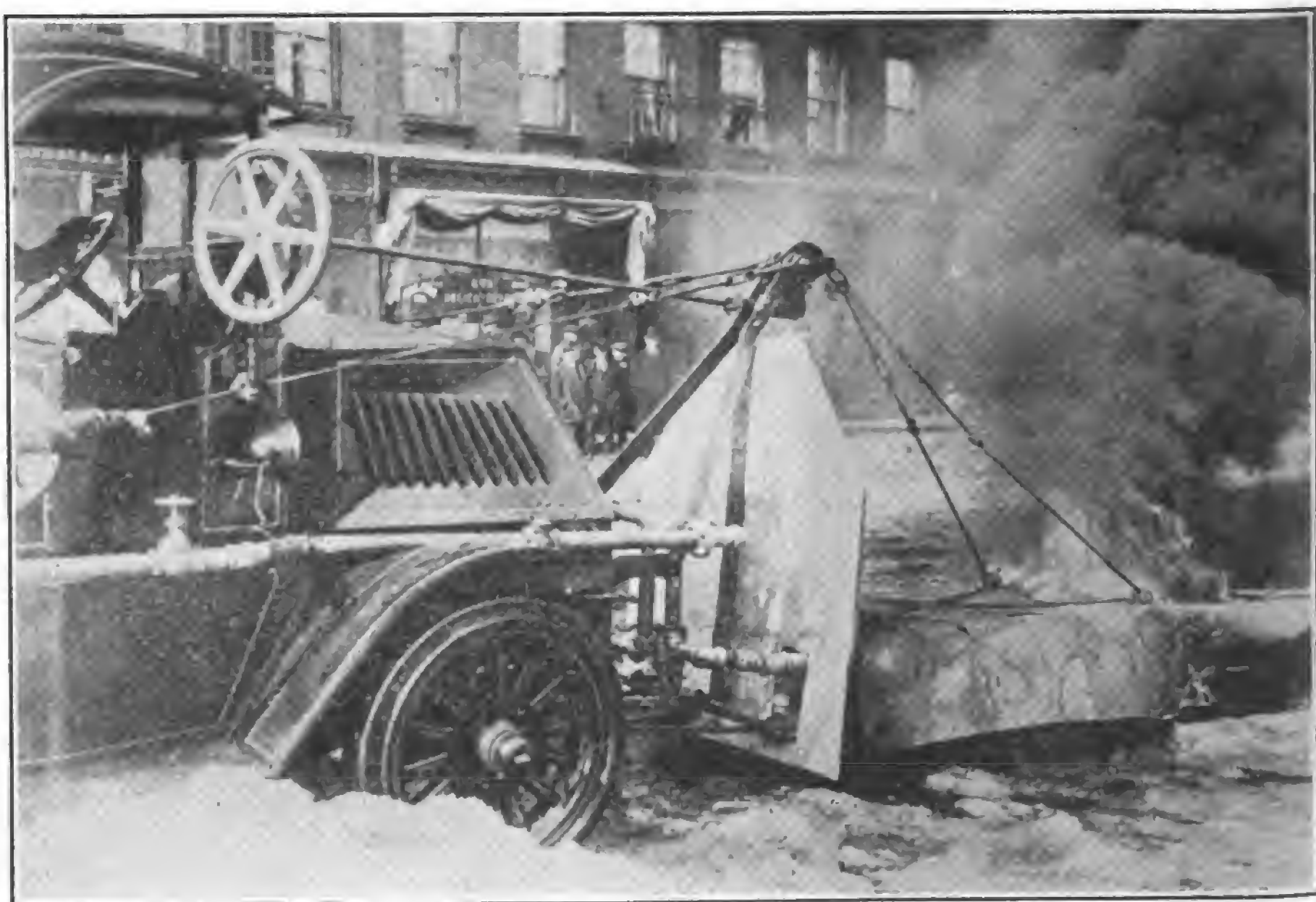
The tractor started at 7:15 in the morning and reached Central Falls, about 21 miles, about 8 o'clock in the evening. Here the driver stopped and hunted a truck to haul the load the last mile. The haul could only be made in car tracks that were bare of snow and ice and the "bob sleds" were so badly racked that the driver did not care to risk certain breakage. Eventually the load was transferred and delivered before midnight. The next morning the tractor was driven back over the road hauling an empty sleigh, although the

Whitins company wanted a large shipment of material.

The tractor driver said that he would have been able to break through and could have made the trip in half the time had he hauled a trailer that could have been drawn in the car tracks. Where the tractor broke the way the sleigh drew easily, but it could not be handled as easily as a trailer, and as the tractor consolidated the snow a trailer would have been far better. The driver of the tractor, who worked it on the Whitin farm, says he would be willing to start for any place in any kind of weather and would be absolutely certain of reaching his objective.

Types of Snow and Ice Removers.

In New York City the removal of snow from the streets, which was done with the purpose of making them passable, has and will cost the city millions of dollars. In this snow removal practically every means that appeared practical was tried. One apparatus that was tried was a snow melter invented by L. V. Stevens, a Canadian engineer, which was developed by the Canadian Pacific railroad to clear its tracks. For railroad work the melter is mounted on a flat car, but for street clearing it was assembled on a Mack 7½-ton chassis. As will be noted from the accompanying illustration it consists mainly of two pipes supported by a derrick, by which these may be raised and lowered. The pipes are perforated and into them a combination of crude oil and air is forced under compression, and when ignited a flame is created that is carried from eight to 10 feet from the pipe. This flame is directed against snow and ice and quickly reduces it to water. In a general way the principle is much the same as that used for a plumber's torch, the truck engine furnishing power for compression of the air in the pipe and forcing the crude oil from an 1800-gallon tank. The truck is driven about five miles an hour and is said to be very sat-



Snow Melter Mounted on Mack 7½-Ton Truck, an Adaptation of an Apparatus Utilized by the Canadian Pacific Railroad for Clearing Its Tracks in the Northwest, Tried Out in New York City.

factory for disposing of snow and ice banks.

One of the most interesting devices tried out for snow removal is built by the National Snow Removing Co., which is mounted on a very large truck chassis and is forced against the snow, which is taken up by conveyors that are driven by the engine of the truck and carried upward and run to either side. The snow may be ejected from side chutes toward the sides of the roadway or into trucks or cars for removal.

Instead of forcing the snow and ice aside and making a path the machine moves it either into vehicles or cars for removal or carries it away, claim being made that the remover will throw the snow 20 feet clear of the path. The capacity of the machine is nine cubic yards of snow a minute, and the company maintains that in a single day it will do work equal to 1000 men with shovels. The outfit weighs 20 tons and it is carried on 40 by 12-inch solid tires.

The inventor claims that the remover is intensely practical where there is heavy fall of snow. The speed is up to five miles an hour and the machine will make a path 11 feet wide and can be worked in four or even five feet of snow. The speed depends somewhat on the depth and density of the snow, and if the snow is to be taken away the progress is limited only by the number of trucks, carts or cars used for haulage.

NOW AN ELECTRIC FUEL VAPORIZER.

Claim is made that an electric vaporizer, the invention of Clyde B. White of Rome, N. Y., which is to be produced and marketed by a well known Buffalo concern, will possibly revolutionize the use of fuel and ignition systems now required for internal combustion engines. With this spark plugs and carburetors are claimed to be unnecessary. Statement is made that during a test with a six-cylinder engined car 63 miles were traversed with a gallon of gasoline, and with a four-cylinder car 90 miles.

White is a mechanic employed by the Rome Brass Co. He recently sold his patent rights to the device for \$35,000 cash, stock in an industry controlled by the J. H. Sager Co., worth \$20,000, and a royalty of \$200 a month. The vaporizer is not yet ready for marketing.

KIMBALL JOINS PIERCE GOVERNOR.

A. L. Kimball, formerly chief engineer of the Fulton Motor Truck Co., is now sales manager for the Pierce Governor Co., Anderson, Ind., in charge of the territory east of Indiana. Mr. Kimball is a man of wide experience in the automotive industry, having been previously employed as experimental engineer for the Hudson Motor Car Co., Chalmers Motor Car Co. and Dodge Brothers. He is a graduate of the University of Michigan and a member of the Society of Automotive Engineers.

The Memphis, Tenn., fire department is now fully motorized, all of its horses having been disposed of by auction sale.

Dorris Motors Corp. Formed by Merger with Astra Co.

The Dorris Motor Car Co. and the Astra Motors Corporation, have been merged at St. Louis into the Dorris Motors Corporation, with capital of \$3,000,000. The entire assets and good will of the Dorris company were purchased. The Dorris company was established in 1902 and was the oldest automobile manufacturer in Missouri. Dorris cars have always been distinctive in design and have been marketed in all parts of the nation, being known as having extremely satisfactory qualities that are characteristic of high priced machines but sold at a popular price.

The head of the new corporation is B. R. Parrott, who was president of the Astra Motors Corporation, who is extremely well known in the industry; A. J. Kesinger, vice president of the Newsom Valve Co., is vice president, and A. H.

BIG COMMERCE CONTRACT CLOSED AT CHICAGO.

During a banquet of the midwest distributors of Commerce trucks, which took place at the Hotel Congress during the progress of the 20th annual power vehicle show at Chicago, announcement was made by George D. Wilcox, director of sales and advertising, who presided, that contract has been made with H. J. Dougherty, former Republic truck dealer at Kansas City, Mo., which totaled more than \$6,000,000.

Mr. Dougherty, who is reputed to be one of the largest distributors of trucks in the country, has the Commerce sale right in Kansas and Oklahoma and contributory territory from Kansas City in Missouri and Arkansas, and he will absorb the Gateway Motor Truck Co., the present Kansas City Commerce distributor.

At the dinner dealers were present from Chicago, Denver, Omaha, Peoria, Hastings, Neb.; Des Moines, Milwaukee, Cleveland, Waterloo, Ia.; Worcester, St.



Banquet of the Midwest Distributors of Commerce Trucks, Held at the Hotel Congress, Chicago, During the Annual Western Show.

Mansfield, general claims attorney for the Missouri Pacific railroad, is treasurer.

The production plan is for the manufacture of Dorris passenger cars and trucks in the Dorris plant which will be increased by the erection of a three-story building 180 by 200 feet on adjacent property, in which Astra passenger cars will be built. The expectation is to increase the number of employees from 450 to 1000 by July 1.

Statement is made that the company has contracts for 1000 Dorris trucks, 1000 Dorris cars and 2000 Astra cars for delivery within 12 months. It has also agreement with the Associated Motors Corporation of New York City to build 3000 Astra cars for export within 18 months.

LANCASTER ADDS TO PLANT.

The Lancaster Body Co., Lancaster, Pa., successor to the Mack Body Co., is to build an addition, 100 by 120 feet, which will give it an entire unit 120 by 200 feet.

Louis, Louisville and Dayton, O. Besides five-minute talks by Commerce distributors several parts manufacturers supplying materials for constructing Commerce trucks talked of the prospects for producing construction units during the present year. Announcement was made by Mr. Wilcox that beginning Feb. 16 \$100 would be added to the list prices of Commerce trucks.

WELEVER PISTON RING CO. INCREASES CAPITAL.

The Welever Piston Ring Co., Toledo, O., has increased its capital from \$20,000 to \$100,000, which increase is to be used principally for expansion of its manufacturing facilities. When the new equipment has been installed the production is expected to be quadrupled, which is believed will be adequate for a considerable period of time.

According to the latest figures of power vehicle registration in Kentucky, approximately 4000 trucks are owned in that state.

DIRECTORY OF THE POWER TRUCK INDUSTRY

*The Trade Names of the Vehicles, the Name of the Manufacturers
and Their Addresses, by City and State, of 202 Principal
Enterprises Now Actively Operating.*

The Basis of the Directory is the Trade Names, Which Are Alphabetically Arranged, and Each Individual Group Is Identified by a Letter, So That Reference to Any One Can Be Made Almost Instantly. All of the Machines Produced by These Concerns Are Included in the Mechanical Specifications That Appear on the Following Pages.

Trade Name	Manufacturer	Address	Trade Name	Manufacturer	Address
A & B	American & British Manufacturing Co.	Providence, R. I.	Landshaft	Wm. Landshaft & Sons.	Chicago, Ill.
Acason	Acason Motor Truck Co.	Detroit, Mich.	Lange	Lange Motor Truck Co.	Pittsburgh, Pa.
Acme	Acme Motor Truck Co.	Newark, O.	Larrabee	Larrabee-Deyo Motor Truck Co., Inc.	Binghamton, N. Y.
Air-O-Flex	Air-O-Flex Automobile Corp.	Cadillac, Mich.	L. M. C.	Louisiana Motor Car Co.	Shreveport, La.
All-American	All-American Truck Co.	Detroit, Mich.	Lombard	Lombard Auto Tractor-Truck Corp.	New York, N. Y.
All-Power	All-Power Truck Co.	Chicago, Ill.	Luverne	Luverne Automobile Co.	Juvenile, Minn.
Apex	Hamilton Motors Co.	Detroit, Mich.	Loyal	Loyal Motor Truck Co.	Erie, Pa.
Armleder	O. Armleder Co.	Grand Haven, Mich.	Maccar	Maccar Truck Co.	Scranton, Pa.
Atlas	Martin-Parry Corp.	Cincinnati, O.	Mack	International Motor Co.	New York, N. Y.
Atterbury	Atterbury Motor Car Co.	York, Pa.	Maibohm	Maibohm Motors Co.	New York, N. Y.
Autocar	Autocar Co.	Buffalo, N. Y.	Manly	O'Connell Motor Truck Co.	Sandusky, O.
Autohorse	One Wheel Truck Co.	Ardmore, Pa.	Master	Master Trucks, Inc.	Wauregan, Ill.
Available	Available Truck Co.	St. Louis, Mo.	Maxwell	Maxwell Motor Co.	Chicago, Ill.
		Chicago, Ill.	Menominee	Menominee Motor Truck Co. of Wisconsin	Detroit, Mich.
Beck	Hawkeye Motor Truck Works	Cedar Rapids, Ia.	Myers	E. A. Myers Co.	Menominee, Mich.
Beech Creek	Beech Creek Truck & Auto Co.	Beech Creek, Pa.	Moreland	Moreland Motor Truck Co.	Pittsburgh, Pa.
Bell	Iowa Motor Truck Co.	Ottumwa, Ia.	Muskegon	Muskegon Engine Co.	Los Angeles, Cal.
Belmont	Belmont Motor Corp.	Harrisburg, Pa.	Mutual	Mutual Truck Co.	Muskegon, Mich.
Bessemer	Bessemer Motor Truck Co.	Grove City, Pa.	Napoleon	Napoleon Motors Co.	Sullivan, Ind.
Bethlehem	Bethlehem Motors Corp.	Allentown, Pa.	Nash	Nash Motors Co.	Traverse City, Mich.
Brinton	Brinton Motor Truck Co.	Philadelphia, Pa.	Nelson & LeMoon	Nelson & LeMoon	Kenosha, Wis.
Briscow	Briscow Motor Corp.	Jackson, Mich.	Netco	New England Truck Co.	Chicago, Ill.
Brockway	Brockway Motor Truck Co.	Cortland, N. Y.	New York	Tegetmeier & Reipe	New York, N. Y.
			Niles	Niles Motor Truck Co.	Pittsburgh, Pa.
Chevrolet	Chevrolet Motor Co. of Michigan	Flint, Mich.	Noble	Noble Motor Truck Corp.	Kendallville, Ind.
Clydesdale	Clydesdale Motor Truck Co.	Clyde, O.	Northway	Northway Motors Corp.	Natick, Mass.
Collier	Collier Motor Truck Co.	Bellevue, O.	Norwalk	Norwalk Motor Car Co.	Martinsburg, W. Va.
Conestoga	Conestoga Motor Truck Co.	Lancaster, Pa.	Ogden	Ogden Motor & Supply Co.	Chicago, Ill.
Columbia	Columbia Motor Truck & Trailer Co.	Pontiac, Mich.	O. K.	Oklahoma Auto Mfg. Co.	N. Muskogee, Okla.
Comet	Comet Automobile Co.	Decatur, Ill.	Old Hickory	Kentucky Wagon Co.	Louisville, Ky.
Commerce	Commerce Motor Car Co.	Detroit, Mich.	Old Reliable	Old Reliable Motor Truck Co.	Chicago, Ill.
Concord	Abbott-Downing Truck & Body Co.	Concord, N. H.	Oldsmobile	Olds Motor Works	Lansing, Mich.
Corbitt	Corbitt Motor Truck Co.	Henderson, N. C.	Onelda	Onelda Motor Truck Co.	Green Bay, Wis.
Corliss	Corliss Motor Truck Co.	Corliss, Wis.	Oshkosh	Oshkosh Motor Truck Mfg. Co.	Oshkosh, Wis.
Couple Gear	Couple-Gear Freight Wheel Co.	Grand Rapids, Mich.	Overland	Willys-Overland, Inc.	Toledo, O.
Croce	Croce Auto Co.	Asbury Park, N. J.	Packard	Packard Motor Car Co.	Detroit, Mich.
Dart	Dart Truck & Tractor Corp.	Waterloo, Ia.	Palge	Palge-Detroit Motor Car Co.	Detroit, Mich.
Day-Elder	Day-Elder Motors Corp.	Newark, N. J.	Parker	Parker Motor Truck Co.	Milwaukee, Wis.
Dearborn	Dearborn Truck Co.	Chicago, Ill.	Patriot	Hebs Motor Co.	Lincoln, Neb.
Defiance	Defiance Motor Truck Co.	Defiance, O.	Pierce-Arrow	Pierce-Arrow Motor Car Co.	Buffalo, N. Y.
DeKalb	DeKalb Wagon Co.	DeKalb, Ill.	Pioneer	Pioneer Truck Co.	Chicago, Ill.
DeMartini	DeMartini Motor Car Co.	San Francisco, Cal.	Power	Minnesota Machinery & Foundry Co.	Minneapolis, Minn.
Denby	Denby Motor Truck Co.	Detroit, Mich.		Power Truck & Tractor Co.	Detroit, Mich.
Dependable	Dependable Truck & Tractor Co.	Galesburg, Ill.			
Diamond T	Diamond T Motor Truck Co.	Chicago, Ill.			

Trade Name	Manufacturer	Address	Trade Name	Manufacturer	Address
Dispatch	Dispatch Motor Car Co.	Minneapolis, Minn.	Rainier	Rainier Motor Corp.	New York, N. Y.
Doane	Doane Motor Truck Co.	San Francisco, Cal.	Reliance	Reliance Motor Truck Co.	Appleton, Wis.
Dodge	Dodge Brothers	Detroit, Mich.	Rennoc	Rennoc-Leslie Motor Co.	Philadelphia, Pa.
Dorris	Dorris Motor Car Corp.	St. Louis, Mo.	Reo	Reo Motor Car Co.	Lansing, Mich.
Double-Drive	Double-Drive Truck Co.	Chicago, Ill.	Republic	Republic Motor Truck Co.	Alma, Mich.
Douglas	Douglas Motors Corp.	Omaha, Neb.	Reynolds	Reynolds Motor Truck Co.	Mt. Clements, Mich.
Duplex	Duplex Truck Co.	Lansing, Mich.	Riker	Locomobile Co. of America	Bridgeport, Conn.
Duryea	Duryea Motors, Inc.	Philadelphia, Pa.	Rock Falls	Rock Falls Mfg. Co.	Sterling, Ill.
			Rowe	Rowe Motor Mfg. Co.	Lancaster, Pa.
			Royal	Royal Motor Truck Co.	New York, N. Y.
Elmira	Elmira Commercial Motor Car Co.	Elmira, N. Y.	Sandow	Sandow Motor Truck Co.	Chicago, Ill.
Ellsworth	Mills-Ellsworth Co.	Keokuk, Ia.	Sanford	Sanford Motor Truck Co.	Syracuse, N. Y.
Erie	Erie Motor Truck Mfg. Co.	Erie, Pa.	Schleicher	Schleicher Motor Vehicle Co.	New York, N. Y.
Evans	Evans Truck & Axle Co.	Auburn, Ind.	Schwartz	Schwartz Motor Truck Co.	Reading, Pa.
Fageol	Fageol Motors Co.	Oakland, Cal.	Selden	Selden Truck Corp.	Rochester, N. Y.
Famous	Famous Trucks, Inc.	St. Josephs, Mich.	Service	Service Motor Truck Co.	Wabash, Ind.
Fargo	Fargo Motor Car Co.	Chicago, Ill.	Shaw	Walden W. Shaw Livery Co.	Chicago, Ill.
Federal	Federal Motor Truck Co.	Detroit, Mich.	Shelby	Shelby Tractor & Truck Co.	Shelby, O.
Ford	Ford Motor Co.	Detroit, Mich.	Signal	Signal Motor Truck Co.	Detroit, Mich.
Forschler	Forschler Motor Truck Mfg. Co.	New Orleans, La.	Southern	Southern Motor Mfg. Association, Ltd.	Houston, Tex.
Fulton	Fulton Motor Truck Co.	Farmingdale, N. Y.	Standard	Standard Motor Truck Co.	Detroit, Mich.
F-W-D	Four Wheel Drive Auto Co.	Clintonville, Wis.	Steele	William W. Steele	Worcester, Mass.
Gabriel	Gabriel Motor Truck Co.	Cleveland, O.	Sterling	Sterling Motor Truck Co.	Milwaukee, Wis.
Garford	Garford Motor Truck Co.	Lima, O.	Stewart	Stewart Motor Corp.	Buffalo, N. Y.
Gary	Gary Motor Truck Co.	Gary, Ind.	Stoughton	Stoughton Wagon Co.	Stoughton, Wis.
G. A. Schacht	Schacht Motor Truck Co.	Cincinnati, O.	Sullivan	Sullivan Motor Truck Corp.	Rochester, N. Y.
Geneva	Geneva Wagon Co.	Geneva, N. Y.	Superior	Superior Motor Truck Co.	Atlanta, Ga.
Gersix	Gerlinger Motor Car Co.	Portland, O.			
Giant	Giant Truck Corp.	Chicago, Ill.	Taylor	Taylor Motor Truck Co.	Fremont, O.
GMC	General Motors Truck Co.	Pontiac, Mich.	Texas	Texas Motor Car Association	Fort Worth, Tex.
Gramm-Bernstein	Gramm-Bernstein Motor Truck Co.	Lima, O.	Tiffin	Tiffin Wagon Co.	Tiffin, O.
Grant	Grant Motor Car Corp.	Cleveland, O.	Titan	Titan Truck Co.	Milwaukee, Wis.
			Tower	Tower Motor Truck Co.	Greenville, Mich.
Hahn	Hahn Motor Truck & Wagon Co.	Hamburg, Pa.	Traffic	Traffic Motor Truck Corp.	St. Louis, Mo.
Hall	Lewis-Hall Iron Works	Detroit, Mich.	Transport	Transport Motor Truck Co.	Mt. Pleasant, Mich.
Harvey	Harvey Motor Truck Co.	Harvey, Ill.	Triangle	Triangle Motor Truck Co.	St. Johns, Mich.
Hawkeye	Hawkeye Truck Co.	Sloux City, Ia.	Twin City	Twin City Four Wheel Drive Co.	St. Paul, Minn.
Hendrickson	Hendrickson Motor Truck Co.	Chicago, Ill.			
Highway-Knight	Highway Motors Co.	Chicago, Ill.	Union	Union Motor Truck Co.	Bay City, Mich.
Higrade	Higrade Motors Co.	Harbor Springs, Mich.	United	United Motors Co.	Grand Rapids, Mich.
Hoover	Hoover Wagon Co.	York, Pa.	U. S.	United States Motor Truck Co.	Cincinnati, O.
Huffman	Huffman Bros. Motor Co.	Elkhart, Ind.	Universal	Universal Service Co.	Detroit, Mich.
Hurlburt	Hurlburt Motors, Inc.	New York, N. Y.			
			Velle	Velle Motors Corp.	Moline, Ill.
Independent	Independent Motor Co.	Youngstown, O.	Victor	Victor Motor Truck & Trailer Co.	Chicago, Ill.
Indiana	Indiana Motor Truck Co.	Davenport, Ia.	Vim	Vim Motor Truck Co.	Philadelphia, Pa.
International	International Harvester Co.	Marion, Ind.			
			Walker-Johnson	Walker-Johnson Truck Co.	Woburn, Mass.
Jackson 4-Wheel Drive	Jackson Motors Corp.	Chicago, Ill.	Walter	Milwaukee Locomotive Mfg. Co.	Milwaukee, Wis.
Jones	Jones Motor Car Co.	Jackson, Mich.	Watson	Watson Products Corp.	Canastota, N. Y.
Jumbo	Nelson Motor Truck Co.	Wichita, Kan.	Ward LaFrance	Ward LaFrance Truck Co., Inc.	Elmira, N. Y.
			Ware	Ware Twin Engine Truck Co.	Minneapolis, Minn.
Kalamazoo	Kalamazoo Motor Corp.	Kalamazoo, Mich.	Walter	Walter Motor Truck Co.	New York, N. Y.
Kankakee	Kankakee Automobile Co.	Kankakee, Ill.	Western	Western Truck Mfg. Co.	Chicago, Ill.
Kearns	Kearns Motor Car Co.	Beavertown, Pa.	White	White Co.	Cleveland, O.
Kelly-Springfield	Kelly-Springfield Motor Truck Co.	Springfield, O.	White Hickory	White Hickory Wagon Mfg. Co.	Atlanta, Ga.
Keystone	Commercial Car Unit Co.	Philadelphia, Pa.	Wichita	Wichita Motors Co.	Wichita Falls, Tex.
Kimball	Kimball Motor Truck Co.	Los Angeles, Cal.	Wilcox	Wilcox Motor Co.	Minneapolis, Minn.
Kissel	Kissel Motor Car Co.	Hartford, Wis.	Wilson	J. C. Wilson Co.	Detroit, Mich.
Kleiber	Kleiber Co., Inc.	San Francisco, Cal.	Winther	Winther Motor Truck Co.	Kenosha, Wis.
Koehler	H. J. Koehler Motors Corp.	Newark, N. J.	Wisconsin	Wisconsin Truck Co.	Joganville, Wis.
			Witt-Will	Witt-Will Co., Inc.	Washington, D. C.
			Wolverine	American Commercial Car Co.	Detroit, Mich.

Mechanical Specifications of Motor Trucks—1920

REVISED EACH MONTH

KEY OF ABBREVIATIONS. *Against name, first time listed. **FRAME MATERIAL**-R-C., Rolled Steel Channel Section; R-I., Rolled Steel I Section; Pr. S., Pressed Steel. **MAKE OF ENGINE**-Bey., Beaver; Cont., Continental; 3-B-S., Golden, Belknap & Swarts; Hink., Hinkley; Her-Spill., Herschell-Spillman; Herc., Hercules; Lycmg., Lyscoming; Wauk., Waukegan; Wisc., Wisconsin. **CYLINDERS**-CAST-B., Block; I, Single; 2, Pairs. **LOCATION OF VALVES**-R., Right; L., Left; O., Opposite; H., Head. **COOLING SYSTEM**-G., Gear; P., Pump; T., Thermo-Syphon; A., Air. **RADIATOR**-Fin., Finned Tubes; Sq. T., Square Tubes; 80. T., 80-sq. Tubes; Mil., Milwaukee; Simp., Simplex; V-T., Vertical Tube; Z-Z-T., Zie-Zag Tubular; Cell., Cellular; Hel., Helical; Ring., Tubes in Circle Around Fan. **MAKE OF GOVERNOR**-Wauk., Waukegan; Mon., Monarch; H-Sp., Herschell-Spillman; Mil., Milwaukee; Simp., Simplex; V., Vacuum; P., Pressure. **CLUTCH TYPE**-D-D., Dry Disc; C-U., Control Unit. **GEARSET TYPE AND LOCATION**-Sel., Selective Sliding Gear; Prog., Progressive Sliding Gear; Ind-C., Individual Clutch; Plan., Planetary; C-U., Control Unit; Fric., Friction; Elec., Electric. **GEARSET LOCATION**-Amid., Amidships; U-M., Unit with Engine; U-J., Unit with Jackshaft; U-X., Unit with Axle. **FINAL DRIVE**-Int. G., Internal Gear; Chn., Chain; Sp. B., Spiral Bevel; D-Red., Double Reduction Gear; S., Spur Gear; Ex., External Gear; F., To Front Wheels; 4, All Four Wheels; W., Worm. **MAKE OF REAR AXLE**-Sal., Salisbury; Torb., Torbensen; Wisc., Wisconsin. **TYPE OF REAR AXLE**-F., Full-Floating; S-F., Semi-Floating; D., Dead. **TIRES**-P., Pneumatic; S., Solid; St., Steel. **IGNITION SYSTEM TYPE AND SPARK ADVANCE**-D., Dual; H., Manual Advance; S., Single; A., Automatic; F., Fixed; Elem., Eilemann; Split., Splitdorf; Conn., Connecticut; West., Westinghouse; G-D., Gray & Davis; Berling., Berling; At-K., Atwater Kent; Al-Ch., Allis-Chalmers; U. S. L., U. S. Lighting and Heating Co.; N-East., Northeast; Split-App., Splitdorf-Apple; Huff-S., Huff-Simms; Auto., Autolite; Leeco N., Leeco-Neville.

TRADE NAME AND MODEL			ENGINE										GEARSET										RUNNING GEAR										STARTING & LIGHTING SYSTEM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Capacity, Pounds	Chassis Price	Wheelbase	Frame Material	Make of Engine	No. Cylinders	Bore and Stroke in Inches	S. A. E. H. P.	Cylinders, How Cast	Width of Piston Ring Groove	Cooling System	Radiator Type	Ignition System Type	Make of Governor	Make of Carburetor	Type of Feed	Clutch Type	GEARSET		Total Gear Reduction in High	Final Drive	Make of Rear Axle	Type of Rear Axle	Tires, Type		Size, Front		Size, Rear		Wheels				Make	Extra Cost																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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TRADE NAME AND MODEL	ENGINE					GEARSET										Type of Rear Axle	TIMES		WHEELS					STARTING & LIGHTING SYSTEM													
	Capacity, Pounds	Chassis Price	Wheelbase	Frame Material	Make of Engine	No. Cylinders	Bore and Stroke in Inches	S. A. E. H. P.	Cylinders, How Cast	Width of Piston Rings	Cooling System	Radiator Type	Ignition System Advance	Make of Governor	Make of Carburetor		Type of Feed	Clutch Type	Type	Location	Speeds	Total Gear Reduction in High	Final Drive		Make of Rear Axle	Type of Rear Axle	Tires, Type	Size, Front	Size, Rear	No. of Spokes	Front	Rear	Hub	Bore	Make	Extra Cost	
Moreland 19C	8,000	4,875	162	pr-s	Cont	4	4 3/4 x 6	36	20-21	1/4	P	cell	Split D-H	Cont	Miller	1 1/2	d-d	sel	amid	4	7.80-1	worm	Timken	f-f	s	36x5	40x5d	8 103	3 1/2	10	13	4 3/4	7 1/2	Opt	Auto	175.00	
Moreland 19J	10,000	5,350	192	pr-s	Cont	4	4 3/4 x 6	36	20-21	1/4	P	cell	Split D-H	Cont	Miller	1 1/2	d-d	sel	amid	4	10.25-1	worm	Timken	f-f	s	36x6	40x6d	8 103	4	12	14 1/2	5 1/2	7 1/2	Opt	Auto	175.00	
Muskegon	4,000	2,325	144	pr-s	Cont	4	4 1/2 x 5 1/4	27	20-b	1/4	P	cell	Eism S-F	Pierce	Stow	1 1/4	d-d	sel	u-m	3	9.00-1	int-g	Torb	f-f	s	36x4	36x6	14 142	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	None	
*Mutual	4,000	3,375	150	pr-s	Wise	4	4 x 6	25	60-61	1/4	P	cell	Bosch S-H	Duplex	Stumb	1 1/4	d-d	sel	amid	4	7.75-1	worm	Sheldon	f-f	s	36x4	36x8	8 8	2 1/2	10 1/2	10 3/4	4 3/4	4	West	West	None	
*Mutual	5,000	5,000	152	pr-s	Wise	4	4 x 6	32	60-62	1/4	P	cell	Bosch S-H	Duplex	Stumb	1 1/4	d-d	sel	amid	4	7.75-1	worm	Sheldon	f-f	s	36x7	42x9	5 5	2 1/4	10 1/4	10 1/4	4 3/4	4	West	West	None	
*Mutual	7,000	7,000	152	pr-s	Wise	4	4 1/2 x 6	32	60-64	1/4	P	cell	Bosch S-H	Duplex	Stumb	1 1/4	d-d	sel	amid	4	7.75-1	worm	Sheldon	f-f	s	36x7	42x9	5 5	2 1/4	10 1/4	10 1/4	4 3/4	4	West	West	None	
*Mutual	10,000	10,000	152	pr-s	Wise	4	4 1/2 x 6	40	60-64	1/4	P	cell	Bosch S-H	Duplex	Stumb	1 1/4	d-d	sel	amid	4	7.75-1	worm	Sheldon	f-f	s	36x8	40x12	5 5	2 1/4	10 1/4	10 1/4	4 3/4	4	West	West	None	
*Napoleon M-9	2,000	1,355	134 1/2	r-c	Gray	4	3 1/2 x 5	19	61-b	1/4	T	tube	Conn	Stumb	1	d-d	sel	u-m	3	6.00-1	int-g	Clark	f-f	s	32x3 1/2	32x4	12 14	1 3/4	2	8	8	4 1/2	4 3/4	Auto	Auto	75.00
*Napoleon M-11	3,000	1,660	132	r-c	Gray	4	3 1/2 x 5	19	61-b	1/4	T	tube	Conn	Stumb	1	d-d	sel	u-m	3	6.00-1	int-g	Clark	f-f	s	32x3 1/2	32x4	12 14	1 3/4	2	8	8 1/2	4 1/2	4 3/4	Auto	Auto	75.00
*Nash 2018	2,000	1,650	130	pr-s	Own	4	3 1/2 x 5 1/4	22	50-b	1/4	P	tube	Eism H	Simplex	Stumb	1 1/4	d-d	sel	u-m	3	6.83-1	int-g	Clark	f-f	s	34x3	34x4	12 14	1 3/4	2	8	8 1/2	4 1/2	Auto	Auto	125.00	
*Nash 3018	4,000	2,175	144	pr-s	Own	4	3 1/2 x 5 1/4	22	50-b	1/4	P	tube	Eism H	Simplex	Stumb	1 1/4	d-d	sel	u-m	3	6.83-1	int-g	Clark	f-f	s	34x4	34x6	12 14	1 3/4	2	8	8 1/2	4 1/2	Auto	Auto	125.00	
Nash-Quad 4017	4,000	3,250	124	pr-s	Buda	4	4 1/2 x 5 1/2	27	20-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x5	36x5	12 122	2 1/4	9	9	9	4 5/8	3 1/2	Bijur	Bijur	125.00
*Nelson & LeMoon F1	3,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	27	20-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x3 1/2	36x6	12 122	2 1/4	9	9	9	4 5/8	3 1/2	West	West	175.00
*Nelson & LeMoon F2	4,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	27	20-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x4	36x7	12 122	2 1/4	9	9	9	4 5/8	3 1/2	West	West	175.00
Nelson & LeMoon F3 1/2	6,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x5	36x5d	14 142	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	175.00	
Nelson & LeMoon F3	10,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x6	40x6d	14 142	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	175.00	
Nelson & LeMoon F3	10,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x4	36x7	12 122	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	175.00	
Nelson & LeMoon F3	10,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x4	36x7	12 122	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	175.00	
Nelson & LeMoon F3	10,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x4	36x7	12 122	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	175.00	
Nelson & LeMoon F3	10,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x4	36x7	12 122	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	175.00	
Nelson & LeMoon F3	10,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x4	36x7	12 122	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	175.00	
Nelson & LeMoon F3	10,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x4	36x7	12 122	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	175.00	
Nelson & LeMoon F3	10,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x4	36x7	12 122	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	175.00	
Nelson & LeMoon F3	10,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x4	36x7	12 122	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	175.00	
Nelson & LeMoon F3	10,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x4	36x7	12 122	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4	West	West	175.00	
Nelson & LeMoon F3	10,000	on appopt	144	r-c	Cont	4	4 1/2 x 5 1/4	32	40-b	1/4	P	tube	Bosch	Pierce	Stumb	1 1/4	d-d	sel	u-m	3	7.00-1	worm	Timken	f-f	s	36x4	36x7	12 122	2 1/2	10 1/2	10 3/4	5 3/4	5 3/4</				

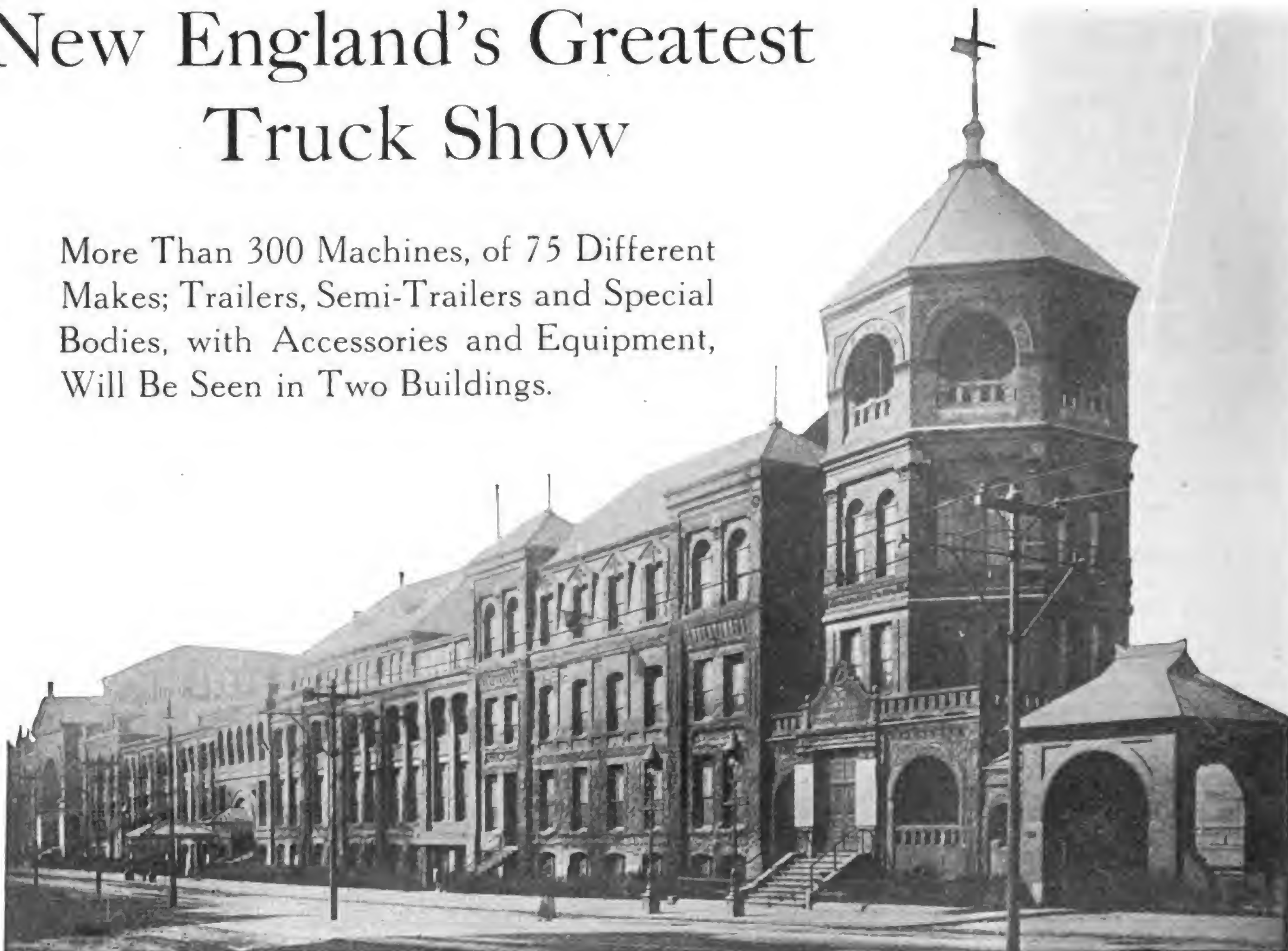
TRADE NAME AND MODEL	Capacity, Pounds	Chassis Price	Wheelbase	Frame Material	Make of Engine	ENGINE										Make of Governor	Make of Carburetor	Size of Carburetor	Type of Feed	Clutch Type	GEARSET			Total Gear Reduction in High	Final Drive	Make of Rear Axle	Type of Rear Axle	Tires			Type of Starting & Lighting System																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
						No. Cylinders	Bore and Stroke in Inches	S. A. E. H. P.	Cylinders, How Cast	Width of Piston Ring Groove	Cooling System	Radiator Type	Ignition System Type and Spark Advance	Make of Carburetor	Size of Carburetor						Type of Feed	Clutch Type	Type					Location	Speeds	Type of Rear Axle		Type of Starting & Lighting System																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split				Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split	Front	Rear	Split

TRADE NAME AND MODEL	ENGINE										Make of Governor	Make of Carburetor	Type of Feed	GEARSET		Total Gear Reduction in High	Final Drive	Make of Rear Axle	Tires		RUNNING GEAR						STARTING & LIGHTING SYSTEM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
	Capacity, Pounds	Chassis Price	Wheelbase	Frame Material	Make of Engine	No. Cylinders	Bore and Stroke in Inches	S. A. E. H. P.	Cylinders, How Cast	Width of Piston Ring Groove				Cooling System	Radiator Type				Ignition System Type and Spark Advance	Type	Location	Speeds	Size, Front	Size, Rear	No. of Spokes	Front Width	Rear Width	Front Spokes	Rear Spokes	Front Flange	Rear Flange	Hub	Bore	Make	Extra Cost																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
Shaw M-2	1,500	1,700 116 1/2	100	pr-s	Cont	4	3 3/4 x 5	19.60	q	1 1/4	T	Mag S-F	Mag S-F	None	Zenith	1 1/4	d	32x4	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	32x4 1/2	3></

TRADE NAME AND MODEL	ENGINE										GEARSET										RUNNING GEAR										STARTING & LIGHTING SYSTEM			
	Capacity, Pounds	Chassis Price	Wheelbase	Frame Material	Make of Engine	No. Cylinders	Bore and Stroke in Inches	S. A. L. H. P.	Cylinders, How Cast	Width of Piston Rings	Cooling System	Radiator Type	Ignition System Type	Make of Governor	Make of Carburetor	Type of Feed	Clutch Type	Type	Location	Speeds	Total Gear Reduction in High	Final Drive	Make of Rear Axle	Type of Rear Axle	Tires				Wheels				Make	Extra Cost
																									Size, Front	Size, Rear	No. of Spokes	Front Width	Rear Width	Size of Flange	Hub	Rear		
Union.	8,000	3,500.171	100	pr-s	Wisc	4	4 1/2 x 6	32.40-4	1	1/4	P	fin	Eism S-H	Duplex	Schebler	3	d-d	sel	u-m	4	10.25	4	10.25	Torb	...	s	36x6	36x10	...	...	...	...	Eism	Opt
United.	3,000	2,375.145	100	pr-s	Buda	4	3 3/4 x 5 1/2	22.50-1	1	1/4	P	tube	Eism	Simplex	Stmgb	3	d-d	sel	u-m	3	7.00	3	7.00	Clark	...	s	34x5 1/2	34x5	...	...	...	...	...	...
United.	5,000	2,975.165-171	100	pr-s	Buda	4	4 1/2 x 5 1/2	29.00-1	1	1/4	P	tube	Eism	Simplex	Stmgb	3	d-d	sel	u-m	4	8.15	4	8.15	Clark	...	s	36x4	36x8	...	...	...	...	...	...
United.	7,000	3,675.157-177	100	pr-s	Buda	4	4 1/2 x 5 1/2	32.40-2	1	1/4	P	tube	Eism	Simplex	Stmgb	3	d-d	sel	u-m	4	10.00	4	10.00	Clark	...	s	36x5	36x5	...	...	...	...	...	...
United.	10,000	4,775.160-185	100	pr-s	Buda	4	4 1/2 x 6	32.40-2	1	1/4	P	tube	Eism	Simplex	Stmgb	3	d-d	sel	u-m	4	12.50	4	12.50	Clark	...	s	36x6	40x6	...	...	...	...	...	...
United F. W. D.	6,000	4,500.130	100	pr-s	Beav	4	4 1/2 x 6	34.30	1	1/4	P	fin	Eism D-H	Ray	Duplex	1	d-d	ind-c	u-m	3	9.00	3	9.00	Own	...	s	36x7	36x7	...	...	...	...	Bijur	...
U. S.	3,000	1,995.144	100	pr-s	Cont	4	3 3/4 x 5	22.50-1	1	1/4	P	tube	Eism	None	Stmgb	3	d-d	sel	u-m	3	7.85	3	7.85	Clark	...	s	36x3 1/2	36x5	...	...	...	...	...	...
U. S.	5,000	2,800.144	100	pr-s	Cont	4	4 1/2 x 5 1/2	27.20-1	1	1/4	P	tube	Eism	Pierce	Stmgb	3	d-d	sel	u-m	3	8.16	3	8.16	Own	...	s	34x4	36x4	...	...	...	...	...	...
U. S.	5,000	3,250.144	100	pr-s	Cont	4	4 1/2 x 5 1/2	27.20-1	1	1/4	P	v-t	Eism	Pierce	Stmgb	3	d-d	sel	u-m	3	7.75	3	7.75	Own	...	s	34x4	36x4	...	...	...	...	...	...
U. S.	7,000	3,500.162	100	pr-s	Cont	4	4 1/2 x 5 1/2	32.40-2	1	1/4	P	v-t	Eism	Pierce	Stmgb	3	d-d	sel	u-m	3	8.01	3	8.01	Own	...	s	36x5	36x5	...	...	...	...	...	...
U. S.	7,000	3,500.162	100	pr-s	Cont	4	4 1/2 x 5 1/2	32.40-2	1	1/4	P	v-t	Eism	Pierce	Stmgb	3	d-d	sel	u-m	3	8.01	3	8.01	Own	...	s	36x5	36x5	...	...	...	...	...	...
U. S.	7,000	3,500.162	100	pr-s	Cont	4	4 1/2 x 5 1/2	32.40-2	1	1/4	P	v-t	Eism	Pierce	Stmgb	3	d-d	sel	u-m	3	8.01	3	8.01	Own	...	s	36x5	36x5	...	...	...	...	...	...
U. S.	10,000	4,850.168	100	pr-s	Wauk	4	4 1/2 x 6	36.15-2	1	1/4	P	v-t	Eism	Wauk	Stmgb	3	d-d	sel	u-m	3	10.25	3	10.25	Sheldon	...	s	36x5	40x5	...	...	...	...	...	...
U. S.	3,000	2,175.133	100	pr-s	Own	4	3 3/4 x 5 1/2	22.50-1	1	1/4	P	fin	Berling	...	Stmgb	1	d-d	sel	u-m	3	7.25	3	7.25	Own	...	s	34x3 1/2	34x5	...	...	...	...	Opt	...
Universal.	4,000	2,800.132	100	pr-s	Own	4	4 1/2 x 5 1/2	29.80-2	1	1/4	P	fin	Berling	...	Stmgb	1	d-d	sel	u-m	3	9.16	3	9.16	Own	...	s	36x4	36x4	...	...	...	...	Opt	...
Universal.	6,000	3,700.132	100	pr-s	Own	4	4 1/2 x 5 1/2	29.80-2	1	1/4	P	fin	Berling	...	Stmgb	1	d-d	sel	u-m	3	10.29	3	10.29	Own	...	s	36x5	36x5	...	...	...	...	Opt	...
Velle.	4,000	2,950.150 3/4	100	pr-s	Cont	4	4 1/2 x 5 1/2	27.20-1	1	1/4	P	fin	Bosch S-H	Pierce	Stmgb	3	d-d	sel	u-m	4	6.00	4	6.00	Tinken	...	s	36x4	36x7	...	...	...	...	...	...
Velle.	7,000	3,900.173 1/2	100	pr-s	Cont	4	4 1/2 x 5 1/2	32.40-2	1	1/4	P	fin	Bosch S-H	Pierce	Stmgb	3	d-d	sel	u-m	4	10.30	4	10.30	Tinken	...	s	36x5	36x5	...	...	...	...	...	...
Victor.	3,000	1,950.140	100	pr-s	Cont	4	3 3/4 x 5	22.50-1	1	1/4	P	fin	Eism S-H	None	Stmgb	3	d-d	sel	u-m	3	7.00	3	7.00	Clark	...	s	34x4	34x5	...	...	...	...	Eism	100.00
Victor.	4,000	2,225.140	100	pr-s	Cont	4	3 3/4 x 5	22.50-1	1	1/4	P	fin	Eism S-H	None	Stmgb	3	d-d	sel	u-m	3	7.00	3	7.00	Clark	...	s	34x4	34x5	...	...	...	...	Eism	100.00
*Vim.	2,700	1,095.108	100	pr-s	Own	4	3 3/4 x 5	22.50-1	1	1/4	P	fin	Eism D-H	None	Stmgb	3	d-d	sel	u-m	3	7.00	3	7.00	Clark	...	s	34x4	34x5	...	...	...	...	West	...
*Vim.	2,800	1,350.127	100	pr-s	Own	4	3 3/4 x 5	22.50-1	1	1/4	P	fin	Eism D-H	None	Stmgb	3	d-d	sel	u-m	3	7.00	3	7.00	Clark	...	s	34x4	34x5	...	...	...	...	West	...
*Vim.	2,800	1,350.127	100	pr-s	Own	4	3 3/4 x 5	22.50-1	1	1/4	P	fin	Eism D-H	None	Stmgb	3	d-d	sel	u-m	3	7.00	3	7.00	Clark	...	s	34x4	34x5	...	...	...	...	West	...
*Vim.	2,800	1,350.127	100	pr-s	Own	4	3 3/4 x 5	22.50-1	1	1/4	P	fin	Eism D-H	None	Stmgb	3	d-d	sel	u-m	3	7.00	3	7.00	Clark	...	s	34x4	34x5	...	...	...	...	West	...
*Vim.	2,800	1,350.127	100	pr-s	Own	4	3 3/4 x 5	22.50-1	1	1/4	P	fin	Eism D-H	None	Stmgb	3	d-d	sel	u-m	3	7.00	3	7.00	Clark	...	s	34x4	34x5	...	...	...	...	West	...
Walker-Johnson.	5,000	2,890.175	100	pr-s	Hercules	4	4 1/2 x 5 1/2	29.00-4	1	1/4	P	fin	Eism S-H	Duplex	Stmgb	3	d-d	sel	u-m	4	8.50	4	8.50	Tinken	...	s	36x4	36x8	...	...	...	...	None	...
Walter.	10,000	5,500.132	100	pr-s	Buda	4	4 1/2 x 6	30.65-1	1	1/4	P	fin	Eism S-H	Own	Stmgb	3	d-d	sel	u-m	4	8.50	4	8.50	Own	...	s	40x6	40x6	...	...	...	...	None	...
Walter.	15,000	5,750.162	100	pr-s	Buda	4	4 1/2 x 6	30.65-1	1	1/4	P	fin	Eism S-H	Own	Stmgb	3	d-d	sel	u-m	4	8.50	4	8.50	Own	...	s	40x6	40x6	...	...	...	...	None	...
*Ward La France.	5,000	3,350.158	100	pr-s	Hercules	4	4 1/2 x 5 1/2	29.00-4	1	1/4	P	fin	Eism S-H	Duplex	Stmgb	3	d-d	sel	u-m	4	8.50	4	8.50	Tinken	...	s	36x4	36x8	...	...	...	...	None	...
*Ward La France.	5,000	3,350.158	100	pr-s	Hercules	4	4 1/2 x 5 1/2	29.00-4	1	1/4	P	fin	Eism S-H	Duplex	Stmgb	3	d-d	sel	u-m	4	8.50	4	8.50	Tinken	...	s	36x4	36x8	...	...	...	...	None	...
*Ward La France.	5,000	3,350.158	100	pr-s	Hercules	4	4 1/2 x 5 1/2	29.00-4	1	1/4	P	fin	Eism S-H	Duplex	Stmgb	3	d-d	sel	u-m	4	8.50	4	8.50	Tinken</										

New England's Greatest Truck Show

More Than 300 Machines, of 75 Different Makes; Trailers, Semi-Trailers and Special Bodies, with Accessories and Equipment, Will Be Seen in Two Buildings.



Huntington Avenue Front of Mechanics' Building Looking South, in Basement of Which Will Be Main Truck Departments.

NEW ENGLAND business men who own trucks, who are considering buying trucks, and those who drive trucks, will find the truck division of the 18th annual show of the Boston Automobile Dealers' Association and the Boston Commercial Motor Vehicle Association, which will be opened March 13, the largest and the best exhibition of

was made to obtain the cooperation of truck manufacturing concerns, but it is absolutely justified by facts, and not only this, had there been more space available the Boston show would be considerably larger.

The reason for this limitation is that the demand for space by exhibitors exceeded that of any previous year by fully 100 per cent. Mechanics' building, in which with one exception all of the



J. A. Hathaway, President, Boston Commercial Motor Vehicle Association.



Chester I. Campbell, Secretary, Boston Commercial Motor Vehicle Association.

freight carrying vehicles ever organized in this country.

This statement may appear to be based on extreme optimism when one understands that the National Automobile Chamber of Commerce shows at New York and Chicago had the direct interest of the largest enterprises in the automotive industry, and that every endeavor



J. W. Maguire, Vice President, Boston Commercial Motor Vehicle Association.



P. S. Aultman, Director, Boston Commercial Motor Vehicle Association.

shows have been held, and which is the largest structure available for expositions in Boston, with 105,000 square feet of exhibition space, was allotted to applicants months ago.

The applications continued to pour in and then to satisfy those who would exhibit in the South Armory in Irvington street, but a block distant from the main show, was secured in conjunction with the Y-D Club, an organization of veterans of the world-famous Yankee Division of the American Expeditionary Force, which is to build and maintain a club house in Boston, was secured.

The armory is a spacious structure, with a splendid drill shed, which has more than 40,000 square feet of exhibition space, and this was allotted to applicants, so that in this building will be seen complete departments devoted to trucks, to passenger cars and accessories. And yet, all who would make exhibition have not been satisfied. Were the armory twice as large it would not meet the demand, for according to the management fully 100 applicants for space have been refused.



J. H. MacAlman, Director, Boston Commercial Motor Vehicle Association.

This statement is made to demonstrate the interest in the exhibition on the part of the automotive industry and the trade. Never before has there been so great demand for exhibition stands. And the reason for this is the belief of manufacturers, distributors, agents, dealers and sales representatives that the show will be productive of more business than ever before.

The optimism of the members of the two associations that have organized the show is equalled by the manufacturers, distributors, dealers and sales agents of accessories, supplies, equipment, parts and specialties. They know that there will be unprecedented volume of business transacted during the show, and they are doing all they can by cooperation with the show management to promote the exhibition and make it productive beyond even the days when vehicles were sold with the knowledge of the buyers that they would have to wait months for them.



Day Baker, Treasurer, Boston Commercial Motor Vehicle Association.

The truck department will show in both buildings more trucks than were ever seen in any single exhibition. There will be a greater number of makes than were shown at either New York or Chicago, where separate exhibits were made, for approximately 75 different makes will be seen in the two buildings. The total number of machines to be displayed will somewhat exceed 300, and the exhibitors will show from one to six.

The original plan of departmentizing the show has been adhered to and departments C and D, the basements under Grand and Exhibition halls of the main building, have been given over in their entirety to trucks and truck equipment and accessories. And in the South Armory the truck exhibits have been grouped so that they can be easily located, and there will be practically the same isolation as were they in a separate part of the structure.

The policy of the management has been to admit as many truck exhibitors to the show as is possible, and this has led to the reduction in size of some of



N. H. Halliday, Director, Boston Commercial Motor Vehicle Association.

the spaces as compared with the floor plans of former years, and this will be quite as satisfying to visitors, for as a rule they would prefer to see as many representative makes of trucks as possible rather than all the sizes of any one make.

The truck department will also include several exhibits of trailers and semi-trailers, a number of displays by body manufacturers and body specialists, as well as a few farm and garden tractors. The truck exhibits will rarely be of chassis only, for while the exhibitors realize that mechanical construction is of prime importance to prospective buyers, the majority of those making inquiry want specific information relative to body equipment, which they realize is necessary if the greatest operating efficiency is to be obtained.

The body display, which will be generally made in the form of completely equipped trucks, will unquestionably
(Continued on Page 100.)



C. P. Rockwell, Director, Boston Commercial Motor Vehicle Association.

The Tenth



3.2 Ton operated by H. J. Heup, Hales Corners, Wis.
Hauling milk



2 Ton operated by Oklahoma Furniture and
Mfg Co., Oklahoma City, Okla.



Operated by Mistele Coal and Coke Company
Detroit, Mich.



5 Ton operated by Brownell & Field Co., Providence, R.I.



2 Ton Federal operated by Mr. Eastman, San Diego, Cal.
Eastman Fruit Co.



2 Ton with stake body, Columbia Motor Co.



2 Ton operated by Milwaukee Woven Wire Works,
Milwaukee, Wis.



This is the sign of the
"Tenth Year Federal,"
a sign significant of ten
years of success in every
field of truck transpor-
tation.

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

Year FEDERAL

EVERY truck that is pictured here is a typical Federal—typical for its long, care-free service and typical of the prestige that it signifies that makes so much for user's satisfaction and dealer's success. And now comes the tenth year Federal!

Behind that phrase are ten long years of service to the truck-buying public. Expressed in that phrase are all the efforts of our engineering department, our sales department, our advertising department—all the efforts of our distributors and dealers—all the good performance of every one of the \$50,000,000 worth of Federal Motor Trucks distributed throughout the world—every day of every year for ten years.

The Tenth Year Federal! It signifies success, the success of seven hundred Federal dealers and distributors, the success of thousands of Federal owners—all founded to greater or to less extent upon the success of the Federal truck.

But that phrase "The Tenth Year Federal" signifies something more than mere material success—it signifies firm adherence to manufacturing ideals and ideals of fair dealing with the public, and with Federal dealers. The good will which the general public holds for Federals is found intensified in the loyal attitude of Federal dealers toward Federal.

The Federal Motor Truck Company is proud of that attitude—proud that it can deserve such loyalty as it finds among its dealers and distributors. That loyalty is one of the big reasons why there are so many Federals throughout the world today.

Federal Motor Truck Company
Detroit, Michigan



FEDERAL

One to Five Ton Capacities

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)



The North Side of Commonwealth Avenue, the Most Beautiful "Automobile Row" of America, Looking from Braves' Field to Fuller Square, Piled High with Snow That Practically Blocked All Power Vehicle Traffic.

International Truck Service to Owners from Factory Branch

FRIENDS of International trucks, old and new, will find the product this year unchanged in general style, so far as outward appearance is concerned, but under the hood and throughout the chassis there has been a touch here and there, making an improvement wherever the engineering department has decided that there was a chance. The New England home of the International, on Somerville avenue, just over the line from Boston, is a busy place these days, for the International has a strong following and New England is a large field. R. H. Nesbitt, the branch manager; L. E. W. Johnson, his assistant, and D. A. Mackenzie, the sales manager, are up to their ears in business, because of the show and the demands made upon them by their clientele.

A matter of interest to International truck owners is the announcement of C. H. Tucker, the advertising manager, that the exhibit in New York at the Grand Central Palace, where all the various types of machinery made by the International Harvester Co. are being shown, will from now on be a permanent feature. Although it is too early to forecast, it is not unlikely that some such arrangement will be made in Boston before long, so that the firm can show its products where they will get undivided attention.

The International trucks are made in five sizes, $\frac{3}{4}$, one, $1\frac{1}{2}$, two and $3\frac{1}{2}$ tons capacity, and with special and regular designs in bodies to meet all regular requirements. Experts are at all times ready to design any style of body for the user who has some need out of the ordinary.

The model H, at $\frac{3}{4}$ tons capacity, is

the "baby" of the International fleet, and the model L, normal load 7000 pounds, is the grandfather. The regular equipment for tires is solid, but pneumatic cords are supplied when desired. Wheelbase runs from 115 inches up to 160 regular, with a special of 185 inches.

Fourteen Service Stations In New England for Acme Truck

THE Acme, called by its maker, the Acme Motor Truck Co. of Cadillac, Mich., "the truck of proved units," is sold in New England by Eugene F. Lally & Sons Co., located at 91-94 Massachusetts avenue, Cambridge. It is built in one, $1\frac{1}{2}$, two, $3\frac{1}{2}$ and five-ton load capacities. Dealers and service stations are located at Brockton, Worcester, Springfield, Fall River, New Bedford, Beverly, Lawrence, Haverhill, Brookline and Plymouth, also at Providence, R. I., and Manchester, N. H.

The central distributing station in Cambridge is being renewed and doubled in capacity, to accommodate new business.

"And if things keep up as they are now going," said Mr. Lally, senior, as he sidestepped masons with their tubs and ducked carpenters with their timber, and at the same time kept his feet out of the painters' pots, "every one of our outside stations will have to go through an upheaval like this to take care of new business. I can hardly keep my salesmen in the place long enough to get really acquainted with them, they're so unusually busy. But we'll be at space 234 at the truck show, in the main building. We

The company chooses to put its radiator back of the engine, which admits of accessibility obtainable in no other manner. One strong feature of the engine is that the cylinder sleeves may be replaced individually, without the necessity of buying a new block. A feature that appeals to the driver is the fourth speed, not found on many trucks, and with this company only on the heaviest model. This permits of a gear reduction that has won the truck fame for endurance and sturdiness.

also handle the Triangle truck, but there is a shortage of space at the show, so we have to be contented with putting on the Acme, and leaving the rest to our remodeled salesrooms."

The Acme is building a five-tonner, to meet the demand for a slightly larger truck. It is equipped with the newest Continental motor, the model B-2, which is especially designed for heavy duty. Beginning with the light model the power plants of Acme trucks have step-ups from a 35-horsepower engine, a 40, a 45 and a 55 for the newest product.

Another feature is the use of the Cotta transmission, on all types except the one and $1\frac{1}{2}$ -ton types. Timken axles are used throughout and the drive is a worm.

Acme bodies of all types are built with an eye to appearance as well as to service—in fact balance is one of the strongest points. Nothing ungainly about any style. Staunchness and sturdiness are the impressions gained by close study.

In the new five-ton model the frame, for instance, is made of heat treated pressed steel, and is nine inches deep. The spring suspension is in keeping with this idea of balanced construction, and the driver's comfort is insured by a cab.



The South Side of Commonwealth Avenue, Looking East Toward Kenmore Square, Lined with Splendid Structures Given Over to Salesrooms and Service Station, Where Most of the Automotive Dealers of Boston Are Established.

Mack Trucks in Great Demand in All Sections of New England

THE Mack truck is the "giant" in its field, and this impression is firm in the minds of the public, which nowadays knows a truck as well as it does a pleasure car. The Mack is built by the International Motor Co., New York City, and its Boston agency is at 185 Massachusetts avenue, Cambridge. Norman H. Halliday is the sales manager and his district is Eastern New England. The main service station is at the same place.

Mr. Halliday is all over his plant. If you find him alone at his desk he is just getting over being busy, and if you don't find him at once you are told he is "busy." But there is enough energy in his six-foot frame to keep him going and he likes it.

"Don't forget that this is big business," says Mr. Halliday. "We have to hustle to keep up with it. Talking truck in some cases is a hard job and often a salesman has to go a bit wild to convince—then he gets into deep water.

"With the Mack it is different. It is one of the few chosen 10 which talks for itself. 'That's a Mack' is what passes in the mind of everyone who sees one of the big fellows. And they are big, some of the models, for they are built for big jobs. You don't often see a 15-ton load scooting around the streets, but when you do, make up your mind it's a Mack tractor.

"One little realizes how many Mack trucks are running around Eastern New England until he looks over our fleet list. They are there by the hundreds."

The Mack comes in two divisions—truck and tractor. The trucks run 3½, 5½ and 7½ tons capacity, all chain drive and with 40 horsepower motors. The tractors run, seven, 11 and 15 tons capacity on the trailers.

The wheelbase of the trucks runs 156, 168 and 180 inches, and that of the tractor 119 inches. There are no freaks about the machine, and according to Mr.

Halliday this year models embody several features new to American practise and some that are wholly original and patented. In addition to its regular uses, which is probably more varied than that of any other truck in the market, Mack equipment is used by many fire departments, as well as for road oilers and street sprinklers.

Packard Experts Concentrate on Owners' Service and Efficiency

PACKARD trucks this year, made in five sizes, from 1½ to 6½ tons load capacity, still further carry out the idea of the Packard Motor Car Co. in holding fast to that which is good, and making it better from time to time. C. P. Carey, who has complete direction of the truck department of the big plant of the Packard Motor Car Co. of New England, out on Commonwealth avenue, Boston, is, comparatively speaking, a new man here in the East, but what he doesn't know about engines and the making of them hasn't been asked of him. He is a thorough mechanical engineer from every standpoint by which an expert is judged.

Speaking in the Packard manner, he would say to his clientele this year at the show: "The business man who purchases one or more Packard transportation units looks on the transaction just as he does on any other purchase connected with his business—as an investment. He expects to get back the sum invested, plus a reasonable profit. It is the firm belief of this company that it and its representatives should give every possible assistance to the protection of that investment.

"Packard freight transportation units are so designed, engineered and constructed as to give efficient service over a long period of time. It is yet to be re-

ported that a Packard truck is worn out—and some of them have been on the road more than 10 years.

"Unless a truck is fitted to the job the owner will lose money on his investment, or his possible profits will be lessened. The Packard factory has its transportation engineering department, and each distributor has his. Through the co-operation of both the business man gets that capacity truck which is best suited to his hauling requirements.

"The factory service administration has in its department a number of practical truck men whose duty it is to travel about the country and keep distributors informed as to the latest method of rendering service. It is the duty of all to see that Packard trucks are kept keyed up to the highest possible degree of operating efficiency."

While no definite announcement is made by the company, there is a half promise that soon the trucks, as well as the "Twins," will be carrying that so-called "motor miracle," the Packard Fuelizer. As this latest device for gas efficiency is strictly a Packard product, the chances are good that it will go to the Packard truck as soon as is possible. Later, if we are to believe the announcement, the device will be manufactured for practically all cars, and will be sold for standard equipment.

Big Farmer Demand, Says New England Commerce Distributor



The Sales Rooms of John L. Judd, New England Distributor of Commerce Trucks, at 683 Beacon Street, Boston.

JOHN L. JUDD of 685 Beacon street is the distributor in New England for Commerce trucks, built by the Commerce Motor Car Co. of Detroit. There are two models, a ton and 1½-ton, and each is guaranteed to take half a ton overload with mechanical safety. Mr. Judd also handles the Dearborn-Smith Form-a-Truck, but his great proposition is the Commerce. He will reel off to anyone a list of 44 different kind of businesses which are getting good service out of their Commerce trucks. He will also tell you that of the various fittings going into these machines only those that have stood the tests and are nationally known are good enough to be used.

Speaking of capacity, Mr. Judd says that statistics show conclusively that of all the trucks in use in this country, 87 per cent. are at or inside the three-ton class.

"This means," says Mr. Judd, "that outside of the big contractors who require heavy duty machines, the light truck user is a force to be reckoned with. He is a big customer, whether he peddles candy or brings in a load of green corn and garden truck, and he is going to get the machine he wants, if he can be shown that he is going to have speed, economy and efficiency. That's why we are offering a truck we think meets the needs of the majority."

Pointing to the various units which go into the makeup of the Commerce trucks, Mr. Judd says: "The perfect co-ordination of these units to produce maximum power at the lowest operating cost consistent with our standard of service is what makes the Commerce a good truck—better than others of the same tonnage capacity. The relation of the component units to each other is so

well balanced that all strains are equally distributed throughout the working parts.

"Because of this perfect balance Commerce trucks built eight years ago are

Republic Distributor Says New England Business Looks Big

THE Republic truck, now in its sixth year in Boston, is now in new hands, the Lebon-Kidd Co., located in a new building at 983 Commonwealth avenue. The firm is composed of M. E. Lebon, treasurer, and A. V. Kidd, president. Edward T. Barnes is the secretary and all are well known to the automobile trade.

"Sixty thousand Republics now in use is a fine advertisement for us," says Mr. Lebon, "but it doesn't say anything about this year's business, and that's what we're after today. Our field is Maine, New Hampshire, Vermont and Massachusetts, a pretty big piece of territory when you look at it for size, but a mighty brilliant prospect when we take into consideration the amount of business there. And reports from our salesmen are all the same—the field is a dandy and we are getting a gratifying share of the business. We are delivering the goods and our service, when any is needed, will stand up with any of them and excels a great many. We are just as much interested in the truck buyer after we have closed a deal as we are in selling the truck to him. We depend on each other. Altogether I will say that this year looks like a good business prospect."

still in service, going strong and producing profits for their owners. Thousands of owners in every industrial line testify to the efficiency and all-round dependability of Commerce trucks under the most severe conditions. As further proof of this remember that the Commerce was adopted as the official machine gun truck of the United States army in France, and it made good under traffic conditions not known in this country."

The number of types in bodies on the Commerce chassis has no limit, and one feature is the "Every Way Body," adapted to almost every form of usefulness. For the farmer there are bodies which are specially designed, even to the extent of carrying cows, horses or pigs. In fact, the Commerce is popular in the farming districts because of its adaptability.

For buyers who want a little more speed and ease of riding, the trucks are equipped with pneumatic cord tires; otherwise the solid type is used. The Commerce claims to be the first to adopt standard pneumatic cords in its regular equipment.

Other features are the Continental Red Seal motor, the Torbensen internal drive rear axle and a specially designed radiator which was the first of its kind in the field. The Commerce claims to be the only truck that comes to the user completely equipped with impulse starter, electric lights, a windshield and a bumper.

The new building for the Republic truck has 12,000 feet of floor space and the parts department is well stocked. The service station is in charge of a competent factory expert and he has a staff of repair men trained in the factory.

Messrs. Lebon and Kidd have pinned their faith in their new venture and did not pick the Republic until they had looked over all makes of power vehicles. For instance, they found that they had friends in 600 users right in their home district.

Mr. Lebon was at one time identified with a company that formerly handled Republic trucks in Boston and is thoroughly familiar with his goods and his field. Mr. Kidd has been a member of the sales force of the C. P. Rockwell Co. for the last seven years and has made a host of friends.

Mr. Barnes, the secretary, has been associated with the financial department of the American Agricultural Chemical Co. for the past 15 years. All are enterprising young men, who for some time have been looking forward to the time when they could have a business of their own.

The parent company, which makes its trucks at Alma, Mich., has a well earned

reputation for providing service all over the United States, and with this object in view it maintains six exclusive branches in various parts of the country for service alone. This is one of the factors which please truck owners by keeping their machines on the job.

The Republic, known as the "truck with the yellow chassis," is built in models running from one ton to 3½ tons capacities. It has a four-cylinder Continental motor with magneto ignition, and is fitted with either solid or pneumatic tires. Among other structural features is the Torbenson internal drive rear axle.

The body styles are practically unlimited. The engineers and designers have covered very thoroughly all works requiring special types of bodies, but wel-

come any suggestion for improvement along special construction which truck users may have in mind.

General contractors as a rule have heavy loads to haul, and they require a ruggedness in trucks beyond that required to do other kinds of hauling. Therefore Republic machines have built into them an abundance of extra strength to withstand rough handling, driving over uneven roads or in places where there are no roads.

Economy is not overlooked and the truck is built to not only handle its rated capacity, but take a large overload. The fuel and oil consumption is very low, a fact which is constantly proven by the high mileage per gallon obtained in ordinary service by hundreds of Republic users throughout the country.



J. F. Hernberg, Truck Sales Manager, Paige-Detroit Co. of New England.

Prospect for Truck Business for Paige Truck Distributor

PAIGE trucks, now well established in New England and built in 1½, 2½ and 3½ tons capacities, have in a comparatively short time earned the reputation that is the basis for the slogan, "The most serviceable truck in America," which differs only in one word from that applied to the passenger car built by the same firm.

J. F. Hernberg, in charge of the truck department of the Paige-Detroit Co. of New England, a young man out of the West, and filled with the enthusiasm of his kind, is well pleased with the tests of his trucks, which led him to talk interestingly on service and serviceability. "From the bumper to the trailer coupling our trucks have won the unreserved approval of the owner and the driver," says Mr. Hernberg. "In five years all results attained show us that we have been on the right track. The war, too, helped to prove to the trade what we already knew, that Paige trucks would stand the gaff. They are made to stand rough usage—more than the ordinary truck will ever be called upon to perform. The different models we are now putting out are the logical outgrowth of this constructive experience, and every little detail has been considered.

"Take any model and study its details, from any standpoint, and one cannot help being impressed with the fact that nothing has been overlooked. Endurance, efficiency, economy and performance, the points everyone looks for, are there, and the Paige company with its well known reputation, stands behind everything that goes into these trucks.

"And the number of trucks we have put on the market, more than have been built by three well known makes I could mention, are the best argument that the Paige engineers know, what they are building."

Optimism is one of Mr. Hernberg's names, although he does not use it on his card. It is evident in all his conversation; he bubbles with it and has succeeded in filling his sales staff all over New England with the same spirit.

"Trucks are sold on a different system than passenger cars," says Mr. Hernberg. "We can't show the customer how slowly she will take a hill on high, or throttle down in traffic, or how many cigarette lighters and flower holders we have got. But we can show them how well the truck will handle a load, how much it will do and how small a bill of upkeep is facing the owner."

Mr. Hernberg read with interest the recent official report that 50,000 farmers in the United States are using trucks in their daily work. "Of all lines of industry, the farmer is one man who needs a truck," says he. "And that is one big thing my salesmen are trying to hammer home to the farmers of New England. Fifty thousand farmers owning trucks in this country is merely a drop in a bucket. The time is here now when the farmer is realizing that the horse is only useful in certain lines. It

wouldn't surprise me to see motor mowing machines in use on some of the big farms, where large fields can be tackled."

For the farmer or truck gardener the Paige company is putting out model 52-19, a 1½-ton machine, with several styles of bodies, and also with bodies for light delivery work. It has a four-cylinder Continental engine, Brown-Lipe transmission and dry plate clutch, with a Stromberg carburetor and Bosch magneto. Its speed on pneumatic is governed at 25 miles per hour; on solid tires at 15 miles per hour. The cab is one of its features for comfort, it being closed in stormy weather so as to be proof against storms and cold. This cab features all Paige trucks.

Mr. Hernberg looks for big business this year throughout New England, with this 1½-ton machine as the most popular for all round medium weight work.



Boston Sales Rooms of the Paige-Detroit Co. of New England, Distributor for Paige Trucks in Six States.

Reo "Speed Wagon" Developed for Fast Delivery, Says Boston Agent



The Entrances to the Service Station of the Linscott Motor Co., Boston Reo Agent, in Beacon Street; the Sales Rooms and Offices Face Commonwealth Avenue.

THE Reo "speed wagon" is too widely known to call for a special introduction, and the Boston Reo agent, the Linscott Motor Co., 566 Commonwealth avenue, has been too long in business to be unknown to anybody who ever heard of an automobile. According to the optimistic talk of Charles G. Andrews, manager for the company, and in charge of the sale of both trucks and pleasure cars, the hardest job he has is to keep all his customers—old and prospective—happy in the possession or the buying of his "speed wagons."

The present Reo truck is not a come-by-chance; it is the result of years of study of the needs of commerce. Reo engineers long ago saw that speed, with a truck that would carry its burden at the same time, was an inevitable demand. So there was evolved the speed wagon, conservatively estimated at 25 miles per hour and capable of much more, and designed to carry three-quarters of a ton. Despite this there is a tendency to put the Reo in the 2500-pound class, for it will carry the load, and with pneumatic cord tires give almost unbelievable mileage. And this, in spite of the fact that high speed, especially with a load, is ordinarily conceded to be expensive.

"We are conservative, but we are alive to all that is new in this business," says Mr. Andrews. "All experience seems to indicate that the speed of trucks should be reduced rather than increased, to offset the deteriorations of the chassis, due to bumping over hard roads, on tires that were almost as hard as the road surface. Having built trucks for many years and thereby accumulating a wealth of experience, the Reo engineers conceived the idea that a truck that could be driven at twice the speed would not only carry as great a load in two trips as one of twice the capacity

would carry in one, but the life of such a truck, if mounted on pneumatic tires, would be nearly twice what it would be if mounted on solid tires. Of course speed implied pneumatics. In fact, some of the oldest truck users told us we were wrong—but they know different now.

"But the 'speed wagon' did not go on

the road for general use until we had tried it out in our own work at the factory in Lansing. Here we carried all kinds of loads on all kinds of streets. And after the most gruelling use the engineers were unable to find a weak link in the chain of its excellence. Of course Reo cars are Reo made. Everything except the electrical equipment, tires and accessories are made in our own factory. We know what we are making and why it is the best. Our motor is normally capable of 35 horsepower and is admittedly in a class by itself."

The "speed wagon" has a wheelbase of 128 inches and a length over all of 171 inches. The motor is of the low compression type, of rugged design and practically free from carbon and valve troubles. Simplicity of control is a feature, and the whole scheme is ease of operation to insure the operator getting the best results.

Altogether the past few weeks leading up to the annual show have been extremely busy ones for Mr. Andrews. For besides carrying on an uninterrupted business, he has had to see to it that a big housecleaning job with alterations here and there was done at the Reo headquarters. The result was that on Washington's birthday, which is the preliminary day to the opening of the big show, found him keeping "open house" at the same old stand, but with the appearance of its being new, for painters, carpenters and masons, to say nothing of the regular sales force, had made everything spick and span.

Winther Truck Sales Are Limited Only by the Factory Production

WINTHER trucks, pretty well down toward the end of the list as given out in the official program, cannot be given that rating as a real part of the truck exhibit. These machines, which range in load capacities from the 1½ ton four-wheel drive type to the big seven-tonner regular, are made in Kenosha, Wis., by the Winther Motor Truck Co., and is designed as a quality plus economy vehicle. M. M. Lowe, manager of the sales force, is exceedingly well pleased with the business in hand and in sight and is impatiently looking forward to the time when the factory will be enlarged and will have a greater output.

The New England sales are under the direction of J. W. Emery Co. of 261 Franklin street, Boston.

Speaking of the show and the trade, Mr. Lowe had this to say:

"The Winther will have its place at the Boston show and we want all our friends to drop in on us. Our truck is one that they cannot fail to like. It is an efficient piece of machinery, proven in every way, and economical. The four-wheel drive model is one that appeals to a great many, especially in the farming districts, where oftentimes something out of the ordinary run of things is

wanted.

"The prospects for a banner year in the motor industry are very bright, especially as far as trucks are concerned, and the outlook for the Winther is very promising. February production records indicate that Winther business has actually doubled in the last year, and with a large amount of orders in the books and a rapidly expanding dealer organization, it seems probable that this will be greatly increased in 1920.

"The present factory, already running at top speed, has proved to be inadequate to meet the production requirements of our increased business. This was foreseen some time ago and today architects and engineers are busy planning for a new assembling plant of reinforced concrete. When this is completed, which will be in the near future, it will make an addition to our present buildings providing about as much more floor space as we now have. Beside being popular at home the Winther has found quite a number of admirers abroad, unusual activity being shown in our export sales. Several important contracts for distribution of Winthers have been signed in Norway, Denmark, Sweden and Portugal, as well as the West Indies."

Owners' Service Specialized by New England Service Truck Agent

THE Service truck, the product of the Service Motor Truck Co., Wabash, Ind., is handled in New England by W. L. Russell & Co., 222 Elliot street, Boston, and in addition maintains a service station in Brookline avenue, as conveniently reached as any repair station in the city. Paul Leonard is the sales manager, one of the youngest in years in the business, but ripe in experience.

Mr. Leonard is quiet and reserved in manners, but is more or less of a Babe Ruth when it comes to putting over real business.

"When trucks are first made," says Mr. Leonard, "they have to be named. All names so far, or at least most of them, have a significance. Some are representative of strength and some are mechanically applicable. But in the selection of the name 'Service' the makers went right at the root of what they were driving at. The name implies all that the truck gives to its owners. Service when they buy, service when they operate and service when they need any.

"As far as I know there is nothing to show that a Service truck has ever worn out on the job. The first truck we built is still doing regular work every day. I believe we have established almost unbelievable records for efficiency and economy. Our truck embodies every feature of value used in the leaders in the field, and in addition we present some extra features which are found in no other truck, regardless of price.

"Looking them all over, there are really but 10 leading trucks in the market, and Service is one of them.

"Another thing that makes it plain that we have the goods is the large number of farmers who are using our machines. A farmer doesn't buy until he knows he is going to get dollar for dollar. He wants value, power, strength, economy and dependability, as when he comes to us we see that he gets it, backed up by our own service."

Service trucks are built in five sizes, one, 1½, 2½, 3½ and five-ton, and with seven models, all standard, with special models on request. The 1½-ton model 36 for instance is special for farm use. There is also a combination chemical fire truck of especial value to small country towns, where outlying districts have to be covered in a manner to keep the taxpayers satisfied.

The engine used is the Buda, well known to the trade for its power and economy. It is a four-cylinder and varies in the different models from 22 to 45 horsepower, according to the demands to be met. Tests show this motor to deliver 11 per cent. more than its rating, and as all owners are tempted to load to the limit, the power plant will take care of this. The speed in the various models ranges from 12 to 20 miles per hour, the lighter trucks being "snappy."

The Service has selected the worm drive rear axle for all its trucks, chiefly because of simplicity and resistance to

wear at vital points. All parts which meet severe strain, such as the frame, the axles front and rear, the steering gear and the springs, are made to go well beyond the margin of safety.

Another feature of the Service is the spring suspension of the rear end. On the five-ton truck, under normal conditions, these springs each take a weight of about 5500 pounds. Factory tests, made before the spring was accepted, show that after a load of 14,000 pounds the springs showed a "set" of 1/32 of an inch, and after 22,000 pounds has been put on the "set" was only a quarter of an inch.

Demand for White Trucks Exceeds the Normal Production of Factory

WHITE" carries prestige with all power vehicle owners and users, just as in the days long gone it represented high quality in sewing machines and bicycles, and the White company is proud of the fact that it has some of its original industrial family in a great organization that is represented in nearly every country of the world.

The White company is one of the few very large automotive concerns that produces trucks exclusively. It was one of the pioneers of the industry and after building cars for years begun the production of trucks. The output of this department was increased year after year until the United States engaged in war with Germany, when the great plant at Cleveland was concentrated on trucks, for this country and its allies, and at the cessation of hostilities the demand for White trucks was such that the manufacture of cars has not been resumed.

The company has branches in different sections of the country, New England being served by that located at 930 Commonwealth avenue, Boston, which has extremely large and attractive sales rooms and one of the best organized service stations of the industry, equipped to afford what is practically factory service for the maintenance of White machines. From this the company serves

its representatives, which are very numerous, and most of them unusually well established.

With reference to White prestige: "The quality is built in," says J. S. Hathaway, the New England manager, "because it is in the men who make the machines. But this year it looks as if the men have lost a lap. The fact is the demand is so great that despite our best endeavors the production will not be equal to it.

"White trucks are produced in five sizes, from ¾ ton to five tons.

For workmanship and material there is none better. Of course the value of a motor truck is measured by performance, in terms of low eventual cost. White trucks have won their position by doing the most work for the least money. They predominate all over the country, with all classes of users, large and small.

"Our roll call for 1919, sent out in April of that year, showed 2774 fleets in active service, totaling 33,319 trucks, besides all the one truck users we have on our list.

"This year we have a little surprise in the line of fire fighting machinery. It is the "Triple B Combination," a pumping engine, chemical engine and hose car, all in one. It is the latest thing in motor fire apparatus, combining in one piece all of the various types.



The Sales Rooms and Service Station of the New England Branch of the White Co., 930 Commonwealth Avenue, Boston, One of the Largest and Most Complete of a Splendidly Developed System.

Holland System, Inc., Takes Large Territory for Clydesdale Trucks



The Salesrooms and Service Station of the Holland System, Distributor for Clydesdale and Atlas Trucks, at Braves' Field, Commonwealth Avenue, Boston.

THE Holland System, Inc., Trading Corporation of Boston, with main offices at 45 Milk street, and its automobile salesrooms "on the Row," Commonwealth avenue, is the newest concern in the local field, and the importance of its advent is evidenced by the amount of business it is doing.

This business organization, whose reputation has been solidly built throughout New England on a basis of quality and service, entered the trade with a quick succession of decisions, which netted it the distribution of Clydesdale heavy duty trucks for Maine, New Hampshire, Vermont and Eastern Massachusetts; the Atlas oversize $\frac{3}{4}$ -ton truck for Eastern Massachusetts; the Perfection and the Overman cushion tires for New England. With characteristic foresight and thoroughness the beautiful plant and show rooms at 949 Commonwealth avenue, at entrance to Braves' field, were purchased outright and both truck and tire departments established there. The company has installed complete service stations for its trucks. It also has in the field for each department well organized and thoroughly trained sales forces under direction of department managers, each of whom has achieved distinct success in his line.

All this is characteristic of Daniel E. and John F. Holland, president and treasurer, respectively, of the corporation, with real New England aggressiveness and devotion to high business principles. They have never allowed the great resources of their organization to remain idle, and when the time seemed ripe in the truck trade they entered with the same banner of quality they have carried to big success in other lines of endeavor.

The Holland brothers, speaking of their venture in the trade, expressed themselves in substance as follows:

"A few months ago we decided to establish ourselves permanently as distrib-

utors for a real, sturdy, speedy and durable light delivery truck, and a complete line of high grade heavy duty trucks. We decided to handle only such trucks as had behind them manufacturers' organizations as would insure us and our clientele permanent, prompt and efficient

service. We mean by this—ability to supply us and our customers with repair parts (at a reasonable price) for their trucks; not only the first year they are in service, but during the entire life of the truck.

"We talked with users of various light delivery and heavy duty trucks; owners of new ones and those who were operating trucks that had seen from one to five years' service. We made inquiries as to the loads that had been carried; the way the trucks had been driven; the promptness of the manufacturers in supplying repair parts; cost of repair parts compared with other trucks of the same type; the expense of operation and upkeep and the comparative second-hand value of the trucks after a few years of service. After a careful investigation along the above lines the trucks we selected as first choice were the Atlas oversize light delivery truck, built by the Martin-Parry Corporation of York, Pa., and the Clydesdale heavy duty trucks, built in capacities of from one to five tons by the Clydesdale Motor Truck Co. of Clyde, O."

It is the intention of the Hollands to put the most complete service in America back of the trucks and tires they handle, so their customers in any part of this territory will be assured the fullest measure of utility.

Truck users generally will welcome them and the reputation they bring from their other activities of living up to every promise.

Federal Truck Distributor Has Two Big Features for Boston Show

THE Federal Motor Truck Co., Detroit, Mich., comes to the Boston show this year with its product tuned up to the last minute, and with a new one-ton size for the buyer to consider. The local branch of the Federal company is at 253 Massachusetts avenue, just over the bridge on the Cambridge side of the Charles river, where there is a good sized automobile district all by itself.

The Boston branch, under the management of Harry Jones, covers all of Eastern Massachusetts, maintains a complete service station and is having a busy time with the opening of the spring trade. Mr. Jones has not allowed the weather to make him pessimistic. His modest smile is on from morning till night.

"We are particularly fortunate in being able to tell our customers that they will get trucks," said Mr. Jones, when the snow was at its height and the railroads were struggling along, crippled by nature and hampered by embargoes.

"Might as well be cheerful," he continued. "There'll be a break in the weather before long, and then those buyers who put off until the robins began to chirp will wish they had ordered when the snow was falling the fastest. That is the part we dread, for when the sun begins to chase away the beautiful snow everyone will come in and want a truck

at the same time. Obviously some will be disappointed at being at the foot of the list.

"The Federal people have two main points this year. One is the 'Tenth Year Federal,' and the other is the new one-tonner. This 'Tenth Year' truck is a part of our exhibit at the show because of what it says. It's paint may not be bright, and it is all nicked and scratched with the thousands of various loads that have been put upon it. But it is still there with the punch for service. It has been in constant use by a Lynn concern and they are as proud of it as is the maker.

"Comparisons of this kind are an asset, but this truck is not the only one that has been putting in years of good service. We've got records enough to talk a man blind. That's why we are going to let this 'Ten Year' boy do its own talking.

"Our new one-tonner is a stride forward in truck construction. It is built for hard work, as we measure truck standards, and yet it is light and speedy. It is like Federal trucks in the main, but it has features which distinguish it from other trucks of similar capacity. It has a rugged pressed steel frame, carrying a 30-horsepower motor plant of the four-cylinder type. It is set up on pneumatic tires, with steel disc wheels, and

the governor is set for a 25-mile speed."

The regular list of Federals runs up from this one-ton machine to the 1½-ton, the two-ton, 3½-ton and five-ton, and the engines go up to 40 horsepower. Bodies, of course, come to suit the work. The heavy duty models have four forward speeds.

Another piece of Federal machinery is the heavy duty tractor, a stubby, chunky affair of 108-inch wheelbase and no cargo space, but provided with a fifth wheel and a draw bar for tractor work. This machine, using a semi-trailer, will go to work on a seven-ton cargo with surprising ease. It is also made up for light duty work on loads around 6000 pounds. Both are particularly well adapted for the man who has a haul where he can carry one load while getting another into place on the trailers.

GENERAL MOTORS WILL BUILD 20,000 TRUCKS.

The production plan of the General Motors Truck Co., which is based on the contract and inquiries made by dealers, is stated to be approximately 20,000 trucks. This estimate is for all sizes, but the greater number will be the model 16, which is rated 1500-2000 pounds load capacity. Statement is made that a very careful survey of the trade has justified this determination with reference to sizes, for there is very great demand for machines that can make rapid delivery and as this chassis was the standard for the United States army ambulances it has been amply proven. The model 16 chassis is now equipped with pneumatic tires as standard, and claim is made that it is one of the best machines ever developed for light work.

LOCKWOOD-ASH HEAVY DUTY SPARK PLUG.

The Lockwood-Ash Motor Co., Jackson, Mich., has begun the manufacture of a heavy duty spark plug especially designed for use in truck and tractor engines, which will be marketed under the trade name of "Sterling," which has identified the products of this concern. Claim is made that the plugs were developed by scientific experimentation and are so constructed that they may be easily cleaned. The porcelain cores are unusually heavy, the combustion chamber is very deep and the monel steel center electrode will not warp. The company maintains that the plugs will have very long service life in extreme operating conditions.

NEW CAMERON ENGINE PLANT IS PLANNED.

The Cameron Motors Corporation, manufacturer of air cooled engines, now operating plants at New York City and Shelton, Conn., is planning to establish a new factory in some city in the middle west that will be convenient to the center of the automotive industry. It will continue the present plants, as the demand for Cameron engines now is such that large production will be necessary.

GMC New England Distributor to Have Mammoth Service Plant

ALTHOUGH the General Motors Co. of Pontiac, Mich., has for several years built a three-quarters ton truck, the lightest of a series of chassis, which runs up to five tons load capacity, the model 16, shown this year by the New England distributor, the Noyes-Buick Co., is a bit more than the original model. It has been refined, developed and improved and is put forth this year as the ¾-ton GMC. It is called the "standard all-purpose truck," and according to the manager, Harry E. Noyes, is most deserving of its title.

Mr. Noyes, busier than ever this year, is in especially good mood as regards the business field—the automobile truck trade and industry in general, inasmuch as both are closely related.

"Our products," says Mr. Noyes, "are too well known to require any fanfare or boosting. We are selling trucks all over New England in a most gratifying manner. All kinds of trucks are in demand, but just now it seems as if the model 16 had the call. It is not an untried product of a new factory. On the contrary, it is a truck with a long record of faithful performance, both at home and in the great war.

"It is a great value, sold at a price that is reasonable and consistent with its quality and reputation."

As further evidence of the increased business coming to this company, one has but to glance at the sign on a new building under way on Commonwealth avenue, which sooner or later will house the Noyes-Buick Co. in a manner more fitting, and which is to be one of the largest automobile buildings in Boston.

At present the concern is at its old

address, 17 Lawton street, but even there, cramped though it is for space, especially in the service and parts departments, all is bustle and expectancy, in view of the coming transfer, when all lines of the business will be housed under one big roof, more convenient for all, especially the customers.

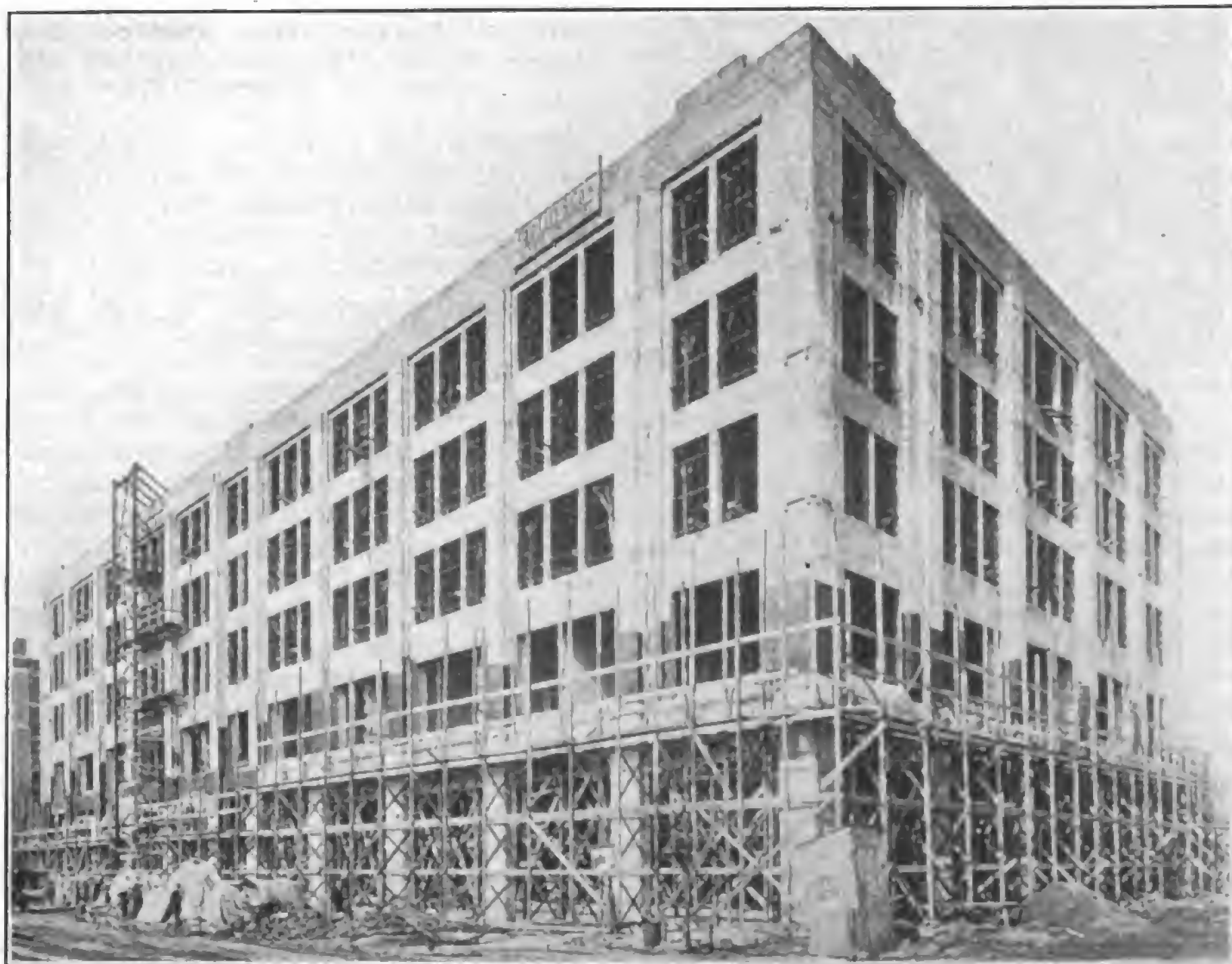
Mr. Noyes modestly refers to the big structure as "our new home," smiles at the prospects, but proudly announces that all New England is welcome to the grand opening, when it comes.

Some of the "truck wisdom" gleaned after a long talk with Mr. Noyes is summed up in the following:

"All GMC engines are simple in construction and can be readily understood and cared for by the average driver. There are no complicated parts to get out of adjustment, every part is carefully protected and all adjustable parts are readily accessible.

"It is utterly impossible to burn out the GMC clutch, because it cannot slip. Even in low gear, with the front wheels against a wall, the clutch will take hold and stall the engine; it won't slip. This clutch engages more smoothly than any other type, even when carelessly handled. It requires no attention or adjustment.

"The transmission causes no trouble. The control lever is easily reached and works extremely smooth. Danger of gear stripping, even in the hands of the most careless driver, is practically negligible, and the simple locking device makes it impossible to engage more than one set of gears at a time. Every detail of construction in a GMC is of the same high order.



The Partly Constructed Service Station Now Being Erected in Commonwealth Avenue, Boston, for the Noyes-Buick Co., New England Distributor for GMC Trucks.

Increased Service Facilities to Keep Pace with Acason Truck Sales

THE Acason truck is sold in Eastern Massachusetts by The Merchants Motors, Inc., at 584 Commonwealth avenue, of which concern Charles S. Davis is the president. This well known truck is built at Detroit, and is now five years in the market. The number in service every day is the best testimonial that the Acason has "made good," and the increasing demand for this make, especially in and around Boston, is such as will convince any skeptic that it has the inbuilt quality to meet all service requirements.

The models run from one ton to five, with bodies adapted to all commercial works. In fact, the bodies are built in a sufficient range of types to serve all general needs, according to the local sales manager, Harry O. Foskett.

In common with a number of other new faces to be seen in the sales organizations, Mr. Foskett comes out of the West—Jackson, Mich., to be exact. To his intimates he is known as "Big Harry," because of his size and commanding personality. And he is as big in enthusiasm as he is in frame.

"The Acason is a most pleasing proposition from a business point of view," says Mr. Foskett, "and judging from its sales it is equally pleasing to those who use it. Sales are good and prospects are plenty. So much business is on hand and in sight that we are having our service station enlarged and put into the best possible shape. When it is finished, and that can't be any too soon, we will have the facilities and the staff to care for increasing trade to the complete satisfaction of all. Prompt and efficient service is a little thing that I'm mighty particular about. When we get a sale we keep after the man. If he wants another truck to care for an increase in his business I want to be sure that he comes back to us for it. Service counts."

Out of the five sizes of chassis turned out by the Acason company, which can be bodied to suit almost any conceivable kind of business, Mr. Foskett points with mingled joy and pride to what his salesmen call the "Husky Acason tonner."

"Here is the best bet for the average truck user," says Mr. Foskett. "It is the aim of every manufacturer to produce a leader. Generally that is done, but at a price. We have produced a leader, and more than that. Contrary to accepted practise we have built this 'Husky Tonner' on the identical lines of our bigger and heavier models. Motor, frame, springs, axles, wheels, etc., every unit is of the same high grade. There has been no skimping anywhere, except possibly in the price, which will run fully \$500 under other makes of the same quality and capacity."

"We have done business enough to know that such a truck is in demand, especially in this district. We know that the light delivery man, running in and out of the city, or between small towns,

needs this type of truck. And we know that many market gardeners around Boston, within 10 or 15 miles radius, can use this truck. The number of visitors to see it is proof enough."

The "tonner" will carry a lot more than its rating. It has a 142-inch wheelbase, with a loading space of 112 inches. The motor is a Waukesha four-cylinder, with a horsepower at normal engine speed of 32. This motor, with its 3¾ bore and 5¼ stroke, is well known for its "pep" and power and for its economy.

Other features are solid tires or pneumatic cords, both brakes internal expanding, a Timken full-floating, worm drive, rear axle and a three-man cab,



Harry O. Foskett, Sales Manager Merchants' Motors, Inc., New England Distributor of Acason Trucks.

with plenty of room and a comfortable seat for the driver, with all operating parts conveniently placed. For those who desire them, Disteel wheels are provided.

MARTIN-PARRY CORP. PLANS BIG EXPANSION.

The York, Pa., factory of the Martin-Parry Corporation, truck body builder, is to be so increased that the production will be doubled by April 1. The machinery and equipment is now being installed. The directors have approved plans for similar increase of the factory at Indianapolis, and when the factories as enlarged are operated to capacity the output will be approximately 100,000 bodies annually. During the past six months the business has increased 50 per cent. The value of the gross production in 1919 was \$3,500,000, and there is expectation of reaching a total of \$8,000,000 the present year.

The Signal Motor Truck Co., Detroit, has made agency contract with the Egbert Motor Truck Co., Philadelphia, Pa.

SIGNAL TRUCK PRODUCTION IS INCREASING.

The reorganization that followed the election of James G. Heaslet, formerly vice president of the Studebaker Corporation, president of the Signal Motor Truck Co. of Detroit, about three months since, has been practically completed, and the plan for production has been determined. This will be increased in whatever volume is necessary to supply the demand for trucks.

No changes will be made in the present design, which is practically standard for all capacities, and the load ratings of one, 1½, two, 3½ and five tons will be continued, the policy being to adhere to the machines that have been proven in service and are known to the users of power vehicles.

The first Signal truck was built in 1913 and no endeavor was made to obtain large production. Sales were made to the principle that when a truck has been sold the relationship with the purchaser is not completed, but is just begun, and this was the foundation of a service policy that insures that each truck affords satisfaction.

The total volume of sales has increased annually, last year the percentage of growth being 314 per cent., as compared with 1918. Signal trucks are used in numbers by the Standard Oil Co., Anaconda Copper Co., Detroit United Railways, Acme White Lead Works, Brunswick-Balke-Collender Co., Timken-Detroit Axle Co. and other large concerns. They have been sold in considerable numbers for municipal service to New York City, Cincinnati, Los Angeles, Detroit, Seattle, Louisville, Spokane and Tacoma.

Statement is made by Sales Manager M. B. Hoagland that 400 trucks in New York City, 400 in Boston, 450 in Detroit, 300 in San Francisco and large numbers in other large cities are kept under surveillance, and from the facts determined the engineers have developed the machines and their service to standards that insure the greatest owners' satisfaction.

MURRAY RESIGNS AS BETHLEHEM PRESIDENT.

That he may devote himself exclusively to the affairs of the American Bosch Magneto Co., Springfield, Mass., of which concern he is president, Arthur T. Murray, who organized and established the Bethlehem Motors Corporation, Allentown, Pa., has resigned the presidency of that company. The Bethlehem corporation has been developed to large proportions by Mr. Murray and is recognized as one of the substantial concerns of the industry, and its success has been largely due to his energy and business capacity.

Mr. Murray has been succeeded by Hiram F. Harris, who joined the Bethlehem corporation a few months ago as general manager. He was formerly general manager for the Republic Motor Truck Co., at Alma, Mich., and is well known as an industrial engineer.

STANDARDIZED EXPORT DEFINITIONS

WHAT is expected will eventually result in standard American export practise was adopted at a conference in New York by representatives of the National Foreign Trade Council, Chamber of Commerce of the United States, National Association of Manufacturers, American Manufacturers' Export Association, Philadelphia Commercial Museum, American Exporters and Importers' Association, Chamber of Commerce of New York State, New York Produce Exchange and New York Merchants' Association.

Emphasis was made of the need of clarity in terms and conditions of sale, and the conference voted to recommend to manufacturers and exporters that all abbreviated terms of export price quotations be abandoned and that such terms be written out in full. Because this may not be accepted immediately, with the object of standardizing and simplifying American practise it adopted a statement of definitions of abbreviations and forms in more general use in the export trade.

These are in their order the normal situations on which export manufacturer or shipper may desire to quote prices. Unless a particular railroad is specified the shipments will be delivered to that most conveniently located. If the buyer, for the purpose of obtaining lower transportation charges, desires that the shipment be delivered to a carrier further removed from the shipper and entailing greater expense than the carrier more convenient, the carrier to which the buyer desires delivery should be specified in the quotation.

The conference took up the different abbreviations generally in use, specifying their application as follows:

F. o. b.	Free on board
F. a. s.	Free alongside ship
C. & F.	Cost and freight
C. i. f.	Cost, insurance and freight
L. c. l.	Less than carload lot

Instead of quoting f. o. b. "cars," "works," "mill," "factory," etc., these variants were considered and a definite point (the town or city) is recommended. There was cogent need of making the

quotations so positive there could be no misunderstanding or misinterpretation. This would avert delays, controversy or litigation. Statement was made that f. o. b. at a named port often meant delivery at the railroad terminal at that point and might be construed to mean delivery at the vessel, for the term originated with export shipments, and recommendation was made that the quotation be f. o. b. vessel in a named port.

Attention was directed to the need of care in agreements covering sales f. o. b. vessel to have agreements explicitly cover the matter of responsibility for loss after the goods have been delivered at the wharf or alongside the ship and before they have been actually loaded. There is no established practise that covers this point. It is understood that the provisions for lighterage covered in the recommendations are only within the free lighterage limits of the port, and that where lighterage outside such limits is required, it is for the buyer's account.

Much importance was attached to the quotations of weight, whether this applied to the net ton of 2000 pounds, the gross ton of 2240 pounds or the metric tons of 2204 pounds, and the hundred weight should also be specified to mean 100 or 110.2 or 112 pounds; that the weight of the car load lot should be specified in America, for a car load varies with the commodity and in different parts of the country. With reference to bulk a car load may range from 12,000 to 90,000 pounds.

Attention is directed to the need in the event of quotations c. & f. or c. i. f. when the shipments are large, to learn in advance the buyer's capacity to take delivery, for the reason that under these terms and as a condition of making the freight rate, transportation companies may require a certain rate of discharge a day, and that rate of discharge might be in excess of the buyer's capacity to take delivery, in which event an adjustment with the transportation company would be necessary, which might affect the freight rate and consequently the price to be quoted.

The conference also strongly urged shippers clearly to understand the provisions of their insurance protection on all

foreign sales, irrespective of the general terms used thereon. In almost all cases it should be possible, when making shipments by steamer, to obtain insurance cover giving full protection from primary shipping point to designated sea port delivery, and or foreign port delivery. As ordinary marine insurance under F. P. A. conditions, i. e., free of particular average, gives no protection against deterioration and or damage to the merchandise itself while in transit, when caused by the recognized hazards attending such risks, shippers should endeavor in all cases to obtain insurance under W. P. A. (S. P. A.) conditions, i. e., with particular average (subject to particular average), when in excess of the customary franchise of three per cent. to five per cent. Under such form of insurance underwriters will be called upon to pay claims for damages when these exceed the stipulated franchise.

The conference pointed out that inasmuch as fees for consular invoices and similar items are arbitrary charges fixed by foreign governments, they are not included in the terms of c. & f. or c. i. f. quotations, and it is part of the duty of the buyer to meet them.

Finally, the conference strongly recommends, as a most effective measure of simplification, the general practise of quoting for export, as far as possible, either "f. a. s. vessel," "f. o. b. vessel," or "c. i. f." Concentration on this small list, all of which terms are readily understood abroad and are difficult of misinterpretation, will, it is felt, be markedly influential in avoiding confusion and controversy.

The conclusions and definitions are the recommendations of a conference composed of representatives of nine of the great commercial organizations of the United States interested in foreign trade. Not all have as yet the force of law or long established practise, but it is the hope and expectation of the conference that these recommendations will receive such adherence on the part of American producers and distributors as to make them in fact the standard American practise. And it is, therefore, expected that in due time they will receive the sanction of legal authority.

WESTERN TRANSIT USES NASH.

The Western Michigan Motor Transit Co., recently formed to furnish motor truck delivery to 90 towns and cities in the vicinity of Grand Rapids, Mich., has purchased a fleet of 10 Nash two-ton trucks, made by the Warren-Nash Motor Corporation.

The Western Michigan Motor Transit Co. is operated by men who have had long experience in the transportation field. Before selecting Nash trucks careful scrutiny was given the entire motor truck field. One of the features of the Nash truck that proved a factor in guiding the decision of the officers of transit company was the locking differential

with which all Nash trucks are equipped.

The locking differential is claimed to supply power to the wheel that needs it most. For instance, when one driving wheel strikes a muddy surface or loose sand and thus loses traction this type of differential automatically locks and practically makes the rear axle a solid piece, thereby transmitting power to the wheel still having traction and enabling the truck to pull through.

TRUCK SAVES FIVE HANDLINGS.

One advantage that the use of the motor vehicle affords in handling freight over the shipment by railroad, that is sometimes overlooked, is that it elimin-

ates at least five handlings, as pointed out by A. C. Burch, vice president and general sales manager of the Clyde Cars Co., Clyde, O. They are:

- 1, from factory or warehouse to freight station;
- 2, loading from freight station or truck to cars;
- 3, unloading at destination from cars to trucks or freight station;
- 4, unloading from trucks to stores, factories or warehouses;
- 5, handling, in case the goods are removed from car to freight station and held until consignee sends a motor truck to remove them.

Then, too, in railroad transport, as better packing is necessary, an additional expense has to be incurred for boxing, crating or protecting by other means in order to prevent loss or damage.

EXPORTS EXCEED IMPORTS MORE THAN \$4,000,000,000.

Exportations from the United States to other nations during 1919 were the largest ever known, the excess over the imports reaching \$4,017,000,000, this being compilation of information obtained by the Department of Commerce.

The following summary:

Year	Exports	Imports
1919....	\$7,922,000,000	\$3,904,000,000
1918....	6,149,000,000	3,031,000,000
	<u>\$1,773,000,000</u>	<u>\$873,000,000</u>

The excess of exports over imports for the year was \$4,018,000,000, as compared with \$3,118,000,000 for 1918, this being a gain of \$900,000,000.

The exports for December were valued at \$681,000,000, a shrinkage of \$60,000,000 as compared with November, and the imports for the same month were \$381,000,000, against \$425,000,000, a decrease of \$44,000,000, but both exports and imports were larger than in December of 1918.

During 1919 the imports of gold amounted to \$77,000,000, as against \$62,000,000 in 1918 and \$552,000,000 in 1917, and the exports of gold were \$368,000,000 in 1919, against \$41,000,000 in 1918 and \$372,000,000 in 1917.

MUST CONSERVE NATURAL GAS.

At the opening session of the conference of state governors, public utility commissioners, geologists, gas appliance manufacturers and operators at the Department of the Interior, Washington, D. C., Secretary Lane warned producers and consumers of natural gas that they should do everything possible to conserve this natural resource. According to figures submitted to the conference by George Otis Smith, director of Geological Survey, more than a billion feet of natural gas are wasted each day in the United States.

Thermos-Tank Truck For Hauling Milk to Condenser

Milk is one of the most necessary of foods and it is one of the most perishable. It must be taken as pure as possible from the dairy farms and delivered quickly where it is prepared for distribution. It must be handled frequently and it must be protected against contamination. It must be kept at a temperature that will insure it against deterioration, and so far as possible it must be kept above the freezing point.

Large city distributors of milk obtain their supplies wherever possible. After production it may be hauled to trains and shipped by cars to terminals, or it may be collected by vehicles and carried over highways to stations. Speed is essential and a service of this kind must be dependable. Probably no transportation organizations are more carefully systematized than those that deliver milk. Retardation of service for a few hours will result in a shortage, and as milk is a necessary food for children a cessation of supply will cause results that may be characterized by physicians as serious.

Pittsburgh milk dealers must obtain their supplies long distances from the city, principally because there is little pasturage within a considerable radius. The Reick-McJunkin Co., one of the largest concerns engaged in the sale of dairy products in Pittsburgh brings milk 150 miles, a considerable volume coming from the rich Lake Erie county at the north. Its local collection and delivery of milk, cream and ice cream is with a fleet of 31 White trucks. It bought two trucks as an experiment in 1916 and has added to this nucleus at intervals.

The company has a condenser at Lockwood, O., and attached to this is a five-ton White chassis on which is installed a glass-lined steel tank having 900 gallons capacity in which milk is hauled from a collection station at Windsor, 10 miles distant. On the platform around the tank

is a rack in which milk can be carried. Two round trips are made each day, and in the busy season three trips. The tank is insulated so that the milk is kept cool in hot weather and from freezing in winter. According to Superintendent R. C. Bundy, the tank method of haulage is cleaner than cans and loading and unloading is far faster.

CONTINUATION OF MOTORIZED TRANSPORTATION DESIRED.

The emergency transportation measures put into effect during the recent dock strikes in Great Britain have accentuated the advantages that might be gained by continuing the use of road motor lorries that was inaugurated at that time. A conference was recently held at Liverpool, attended by representatives of the Mersey docks and harbor board, local food control committee and other interests affected, after which an appeal was forwarded to the government requesting the continuance of the emergency road transport service with a view to lessening the port congestion.

The sentiment was expressed at the meeting that the time had arrived for the greater utilization of road motors for the carriage of goods between the Liverpool docks and the inland manufacturing centers and that motor haulage for a distance of, say, 30 or 40 miles, was entirely practicable. The lorries could be controlled and allotted by the minister of transports, through the railroad and port authorities.

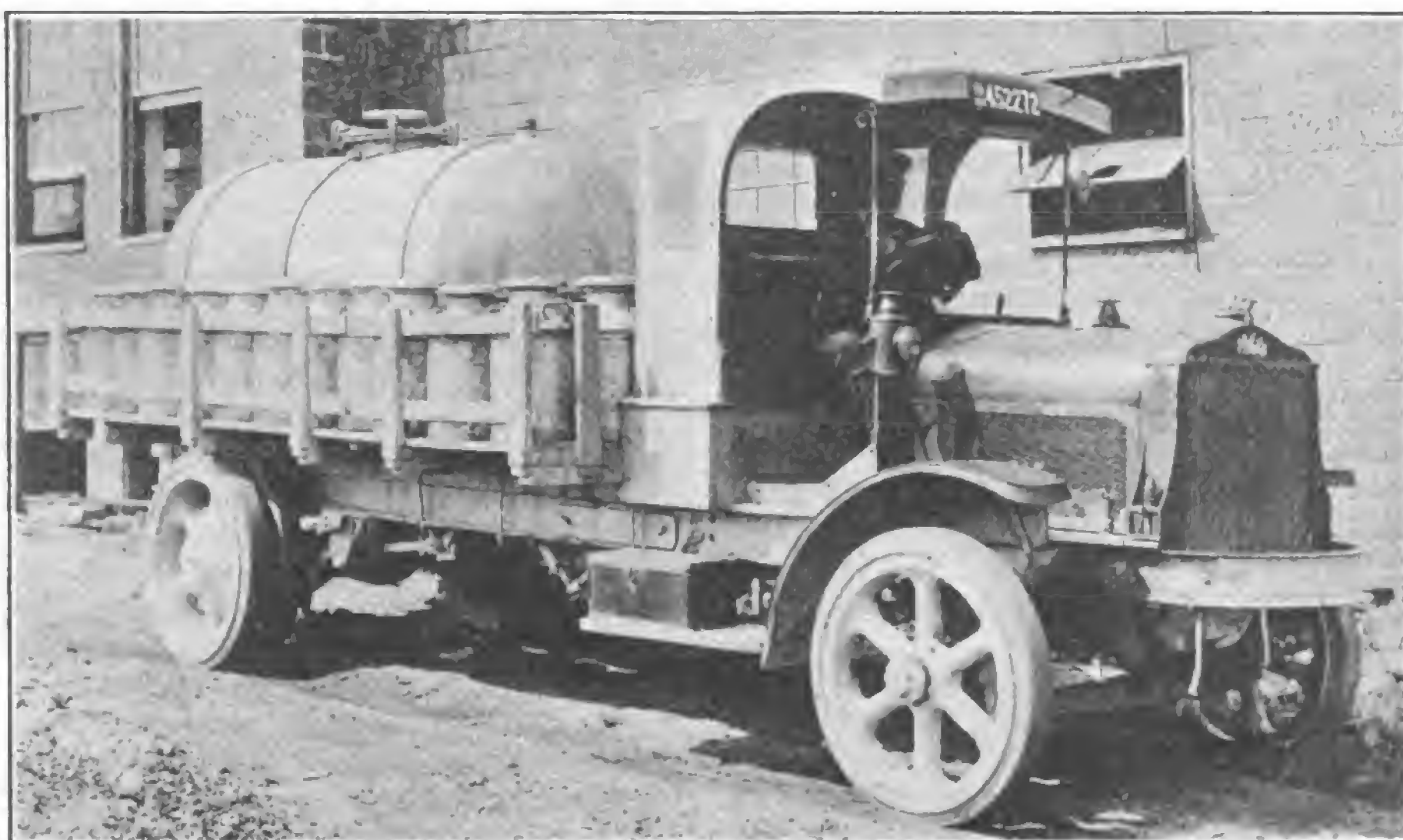
MONTANA TRADE COMMISSION LAW INVALID.

The Montana trade commission law has been declared unconstitutional and invalidated by a court's decision, which will be a source of satisfaction to manufacturers and dealers doing business in that state. The statute was reviewed in an action to determine its constitutionality, in which claim was made that it practically prevented open competition, depriving individuals of their right to sell their property at prices determined by supply and demand and substituting for this right the control of the commission. When the bill was enacted there was strenuous opposition to its passage, the ground being that it abridged the freedom of contract and took property without due process of law.

HEADS CINCINNATI ASSOCIATION.

The Cincinnati, O., Automotive Trades' association has appointed John J. Behle as its manager, and he will make his headquarters at 409 First National Bank building. The organization is planning for a vigorous season's work along various lines of interest to the trade.

A truck division will be a feature of the 20th semi-annual show of the Indianapolis Automobile Trades Association, to be held at the state fair grounds in the manufacturers' building in that city March 8-13.



White Five-Ton Truck Chassis Equipped with a Glass-Lined Insulated Tank for Milk Haulage by the Reick-McJunkin Co., Pittsburgh, Pa.

**STUART NEW SELDEN ASSISTANT
SALES MANAGER.**

Charles E. Stuart has been appointed assistant sales manager for the Selden Truck Corporation, Rochester, N. Y., by



Charles E. Stuart, Assistant Sales Manager, Selden Truck Corp.

Vice President Hal T. Boulden and began his duties Feb. 1. Mr. Stuart has had years of experience in the power truck trade as salesman, dealer and field sales manager and is unusually well qualified for the work he has undertaken with the Selden organization.

**STANDARD MODEL 56 ONE-TON
TRUCK.**

The model 56 one-ton Standard truck chassis was shown for the first time to the western trade at the Chicago show, this unit, as are the other Standard chassis, being constructed of standardized components, produced by specialists and recognized by the industry as highest quality. The model 56, however, differs with the others in that it is regularly equipped with pneumatic tires.

The design of the truck in general is the same as all Standard machines, and the policy of the manufacturer, established 10 years ago, with reference to the use of proven units and carefully developed methods, has been adhered to. The size is built to supply a demand from oil fields and the farming sections of the country that cannot be met with trucks equipped with solid tires. Claim is made that the pneumatic shoes will make possible increased speed and perishable farm products and fragile freights of all kinds can be hauled with little if any loss. The chassis is equipped with a powerful Continental engine and it meets all the requirements for inter-urban haulage, being designed to obtain minimum operating and maintenance cost and long service life.

The chassis was approved by dealers and distributors generally, and this was established by the orders received for quantity shipments during the remainder of the year.

**SERVICE SALES PROMOTION MAN-
AGER DEAD.**

Frank L. Johnson, who was sales promotion manager for the Service Motor Truck Co., Wabash, Ind., died recently



Frank L. Johnson, Sales Promotion Manager, Service Motor Truck Co.

at Wabash after a short illness. He joined the company organization in June, 1919, shortly after receiving a discharge from the Marine Corps, U. S. N., and his work was such that exceptional results were obtained and his future was regarded as unusually promising.

**HENDERSON DIRECTS MARTIN-PAR-
RY SALES.**

The output of the Martin-Parry Corporation, builder of truck bodies, with factories at Indianapolis, Ind., and York, Pa., which is claimed to be the largest industry of the kind in this country, are now marketed by R. P. Henderson, vice president and director of sales, with headquarters at Indianapolis. Mr. Henderson was general sales manager for the Parry Manufacturing Co. for three years and before that was associated with several automotive enterprises.

**B. G. KOETHER NEW HYATT BEAR-
ING VICE PRESIDENT.**

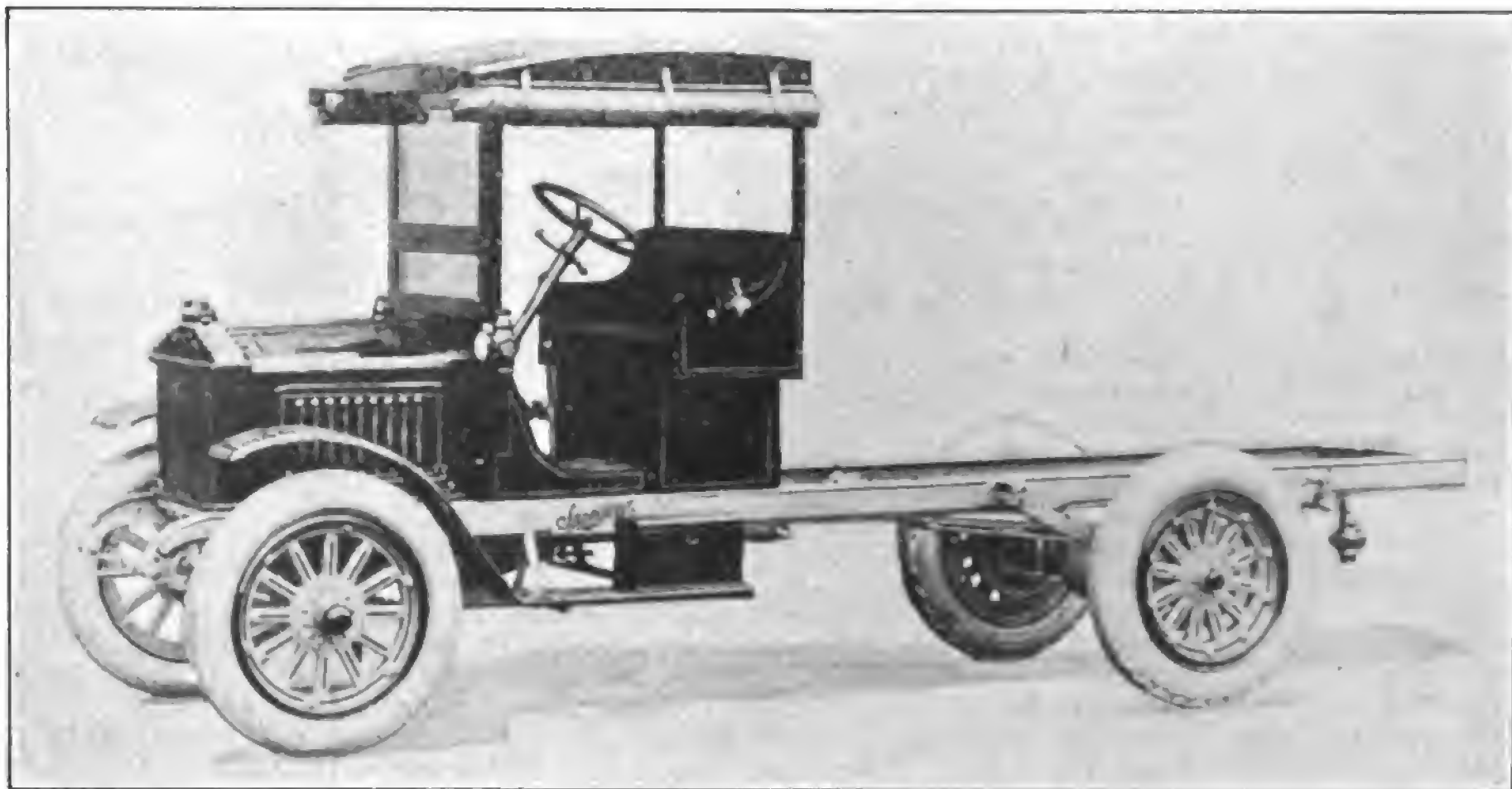
The Hyatt Roller Bearing Co. has rewarded the 18 years service of B. G. Koether, during which he served as an



B. G. Koether, Vice President, Hyatt Roller Bearing Co.

accountant, purchasing agent, assistant sales manager and sales manager, by electing him vice president, in charge of sales and advertising, and he will shortly leave Detroit for Harrison, N. J., which he left 10 years ago when he was made sales manager and located at Detroit. He has been a director of the company for several years.

During Mr. Koether's administration of the sales department the company has increased wonderfully and its product is recognized as a standard of the automotive industry the world over. Mr. Koether has developed a splendid organization and to his energy and foresight is due in no small part the remarkable growth of the company's business. His individuality is reflected in the pages of the "Quieterion," a little monthly publication, in which his viewpoints are originally expressed to the sales organization, to which it is distributed.



Model 56 Truck Chassis, with Cab, One Ton Load Capacity, the Latest Production of the Standard Motor Truck Co.

(Continued from Page 85.)

prove the most interesting ever seen in New England. While there are numerous standard types of bodies that can be used with or without adaptations for a great diversity of works, truck owners very generally understand that the greatest economy is obtainable with bodies that are designed by specialists for a given use, and that the special productiveness of bodies built for specific work more than justifies the additional initial investment.

Body hoists, both power and manual operating, and hoisting winches for heavy work, are standard equipment, and generally demanded for heavy haulage. Within the past year much attention has been given to convertible bodies, some of which are adaptable for six or more special uses have been designed and are now stocked to supply general demands. Many of these are decidedly clever developments and will be a source of much interest.

The truck manufacturers as a rule are specializing trucks with load capacities of 1500 and 2000 pounds, designed for fast work on pneumatic tires, that are fitted with every practical equipment that will economize time and labor, and with electric lighting and starting. Some of these machines have four ratio transmission gearsets to insure adequate power where the roads are rough and the grades heavy.

The big trucks have this equipment invariably, with impulse starters, special fuel vaporizers and tire pumps when pneumatic shoes are used. There has been large advance made in means of chassis lubrication, which will be a feature of the latest designed machines.

One of the features of the show will be the "completely equipped" trucks, for many manufacturers, especially those producing the smaller sizes, have carefully studied equipment with a view of offering units on which no additional investment is necessary, aside from the bodies, to adapt them for nearly all uses. This policy is regarded as being economical for purchasers, for buying and installing accessories that are believed to be essential is not only costly, but a

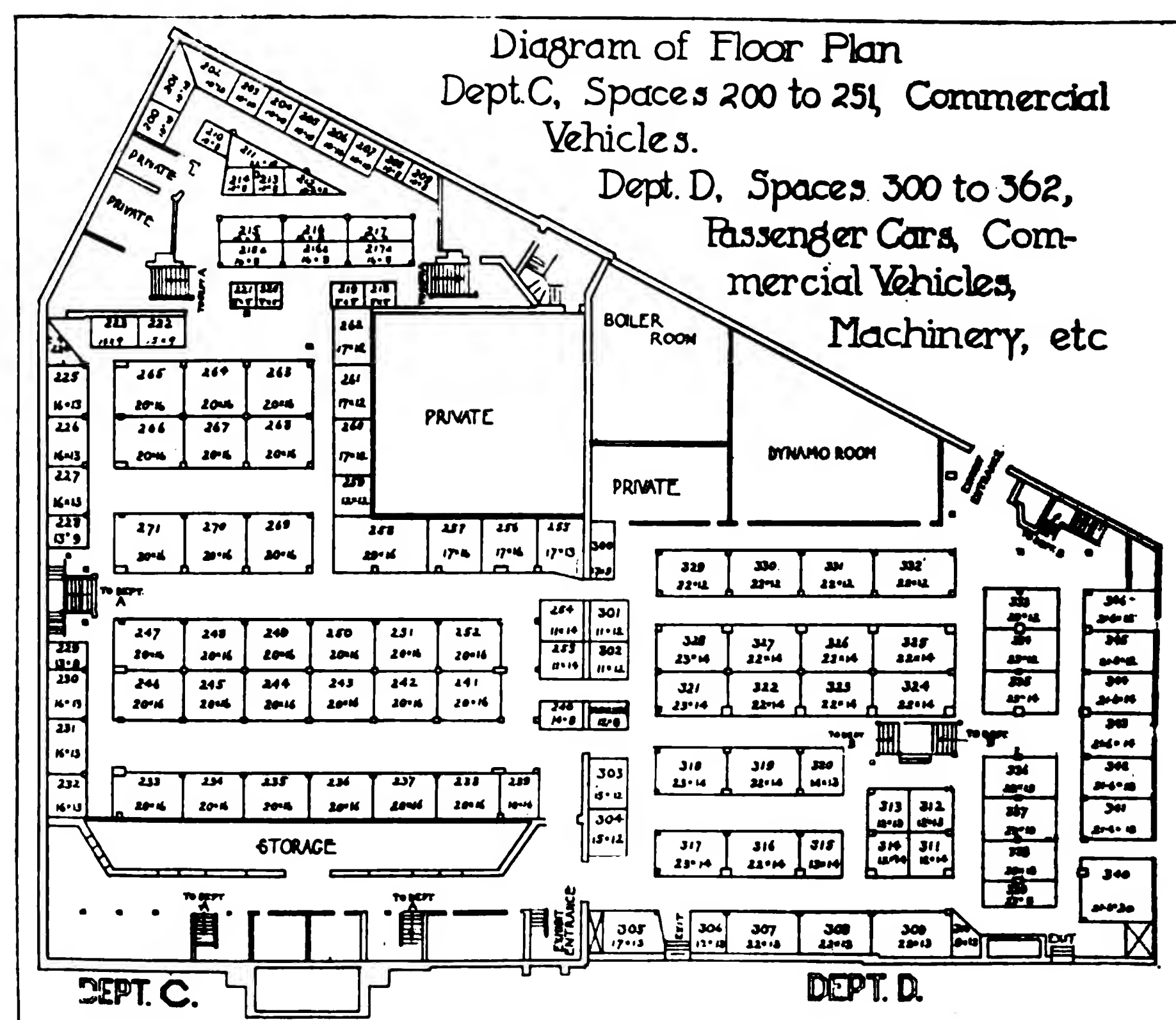


Diagram of Departments C and D, in the Basement of the Building. Showing the Location of the Exhibitors' Spaces by Number.

truck design that anticipates the use of generally demanded equipment initially need be no more expensive than design that necessitates changes that are oftentimes makeshifts.

The sales representatives have found that there is no greater sales resistance when a truck is offered at a price that includes practically every utility than when sold without them, even though there be a considerable difference. As a matter of fact the "complete" truck can be priced considerably less than the cost of buying and installing equipment unit after unit, and this obviates the time required for buying and installing, two items of some importance to the average business men.

To be sure the buyer who will be satisfied only with his own choice and does

not consider the time and cost may purchase the bare chassis and equip it to satisfy himself, but the majority of business men will accept the recommendation of the manufacturer of the equipment offered. Undoubtedly the result is close comparisons of the types and qualities of accessories and fittings, but the sales policy impels discrimination and there can be no criticism of critical buying.

The show will be opened at 2 o'clock the afternoon of March 13, and thereafter, until the close, March 20, the hours will be from 10 a. m. to 10:30 p. m. There will be the usual elaborate decorations of the hall, suggestive of spring, and the customary band and orchestral concerts will be given both afternoon and evening.

Partial List of Exhibitors at Boston Automobile Show

Space	Name	Address	Space	Name	Address
233	Acason Motor Truck Co.	Detroit, Mich	202-203-204	Autowa Car.	Boston
710	Acme Die-Casting Corp.	Boston			
234	Acme Truck.	Cambridge	200-201	Babcock Sales Co.	Boston
839	Advance Automobile Acces. Corp.	Chicago	309-310	Baker Motor Truck Co., Day.	Boston
262	All American Truck Co.	Chicago	336-337	Baker Motor Sales Co., Inc.	Cambridge
426	Allen Car.	Boston	834	Bascom, George R.	Boston
816	American Car.	Boston	408	Bayerson Oil Works.	Boston
434	American Bosch Magneto Corp.	Boston	14-18	Beacon Motor Car Co.	Boston
		Springfield, Mass.	876B	Bearings Specialty Co.	Boston
545-546	American Chain Co.	Bridgeport, Conn.	423	Becker Bros.	Chicago
527-528	American Motor Equipment Co.	Boston	22-23	Becker Stutz Automobile Co.	Boston
801	Anderson Car.	Boston	852	Beckley-Ralston Co., Inc.	New York
836	Anderson Electric Specialty Co.	Chicago	236	Beeman Garden Tractor.	Brighton
138	Anthony, Frank P.	Boston	810	Bethlehem Motors Corp.	Allentown, Pa.
617	Apco Manufacturing Co.	Providence, R. I.	400	Bethlehem Spark Pg. Corp.	S. Bethlehem, Pa.
115	Apperson Motor Car Co. of N. E.	Boston	31	Biddle Car.	Boston
Spec. Dept. G	Argonne Car.	Boston	619	Bigelow & Dowse Co.	Boston
605	Arrow Grip Mfg. Co., Inc.	Glens Falls, N. Y.	622-623	Black & Decker Mfg. Co., The.	Baltimore, Md.
800AA	Atlas Truck.	Boston	525-526	Boice Motor Equipment Co.	Boston
558-559	Atwater Kent Mfg. Works.	Philadelphia	414	Boston Blacking Co.	E. Cambridge
134-135	Auburn Car.	W. Somerville	140-144 Inc.	Boston Buick Co.	Boston
323-324-325-326	Autocar Sales & Service Co.	Boston	216-216a-217-217a	Boston Federal Truck Co.	Boston
838	Auto Gear Co. of Boston.	Boston	146, 333	Boston Oldsmobile Co.	Boston
605AA	Automatic Air Cushion Co.	Boston	849	Boston Morris Plan Co., The.	Boston
602	Automobile Legal Association.	Boston	5-9	Bowman Co., The J. W.	Boston
604	Automobile Mutual Fire Ins. Co.	Boston	24-25	Brewster Car.	Boston
603	Automobile Mutual Liability Ins. Co.	Boston	137	Briscoe	Boston

Space	Name	Address	Space	Name	Address
413	Bristol Mfg. Co.	Boston	881A	Ford Mica Co., Inc.	New York
308	Britton-Stevens Motor Co.	E. Cambridge	100-101-218-219	Ford Motor Co.	Cambridge, Mass.
338-339	Brockway Motor Truck Co.	Cortland, N. Y.	218-219	Fordson Tractor	Cambridge, Mass.
531-532	Brooks-Skinner Co., Inc.	Quincy Point, Mass.	701	Fracto Specialty Co., Inc.	Boston
503-504	Brunner Mfg. Co.	Utica, N. Y.	406	Franklin, M.	Boston
420	Buda Co., The	Harvey, Ill.	7-11	Franklin Motor Car Co.	Boston
140-144 Inc.	Buick Car	Boston			
841	Burditt & Williams Co.	Boston	243-250	Garford Motor Truck Co., Inc.	Boston
600	Burton-Rogers Co.	Boston	624	Gill Piston Ring Co.	Boston
			17B	Gilmore Motors, Inc.	Boston
2	Cadillac Automobile Co. of Boston	Boston	319-320	G. M. S. Truck	Boston
3	Caldwell, Inc., Frederick J.	Boston	151	Grant Motor Sales Co.	Boston
606	Campbell Co., A. S.	Boston	611	Greb Co., The	Boston
301, 302, 522	Campbell Motors Corp.	Boston	540	Green & Swett Co.	Boston
24-25	Canterbury, Inc., George W.	Boston	621	Greene Co., Joseph E.	Boston
803	Capitol Motors Corp.	Fall River, Mass.	610	Grow Tire Co.	Boston
411	Carroll Mfg. Co.	Arlington, Mass.	300	Guaranty Motors Co.	Cambridge, Mass.
425	Case Car	Boston	31	Guertin-De Rochemont Co.	Boston
437AA	Cee & Vee Products Co.	New York			
702	Central Automobile Tire Co.	Boston	Special Dept. G.	Hall Motor Co.	Boston
512	Challoner Co.	Oshkosh, Wis.	502	Halliday Co., L. P.	Streator, Ill.
117-118-132	Chalmers Car	Boston	401	Harnett Lubricating Co.	Boston
518-519	Champion Ignition Co.	Flint, Mich.	719-720-822-829	Harris Motors Co., Inc.	Boston
537	Champion Spark Plug Co.	Toledo, O.	26-27-28	Hart Co., A. T.	Boston
122A-123-124	Chandler Motors of N. E.	Boston	507-508	Hartford, Inc., Edward V.	New York
435	Chase & Co., L. C.	Boston	405	Hart & Hutchinson Co., The	Boston
843	Cherry, Inc., A. L.	Boston	418	Hassler, Inc., Robert H.	Indianapolis, Ind.
116-133-344	Chevrolet Motor Co. of N. E.	Boston	38	Haynes Car	Boston
837	Clamert Mfg. Co.	Pittsburgh, P.	26-27-28	H. C. S. Car	Boston
260-261	Clark Equipment Co.	Buchanan, Mich.	125-126-127B	Henley-Kimball Co.	Boston
134AA	Class Journal Co.	New York	804	Hennigan, Inc., Walter B.	Boston
236	Cletrac Tractor	Somerville	108-109-313-314	Henshaw Motor Co.	Boston
122A-123-124	Cleveland Car	Boston	442-443	Hillman Auto Supply Co.	Boston
800AA	Clydesdale Truck	Boston	121-122B	Hinchcliffe Motor Co., The	Boston
859	Cobb Electrical Appliance Co.	Forest Hills	856	High-Volt Transformer Mfg. Co.	Milwaukee
439	Cochran Mfg. & Forging Co.	Chicago	800AA	Holland System Inc., Trading Corp.	Boston
36-37	Cole Car	Boston	732	Holmes Motors, Inc.	Boston
726-727	Columbia Tire & Top Co.	Boston	232-807	Hosmer-Hald Co., Inc.	Boston
113-114	Columbia Car	Boston	409	Houde Co., The	Cambridge, Mass.
253-254	Commerce Truck	Boston	125-126-127B	Hudson Car	Boston
425	Commonwealth Car	Boston	517	Hudson Motor Specialties Co.	Philadelphia
542-543	Connell Co., W. J.	Boston	232-807	Huffman Truck and Car	Boston
129-130-131	Connell & McKone Co.	Boston	Special Dept. G	Hupmobile Car	Boston
842	Copithorn Mfg. Co.	Boston			
704	Corlew & Co., Frank S.	Boston	818-833	Indiana Boston Truck Corp.	Cambridge
510	Cotta Transmission Co.	Rockford, Ill.	851	Inside Spot-Light Control Co.	Toledo, O.
815	Cotton Motor Co.	Boston	237-238	International Harvester Co. of America	Somerville
500-501	Coward Auto Supply Co.	Boston			
415	Crew Levick Co.	Cambridge, Mass.			
814	Crow-Elkhart Car	Boston	427	Jackman-Jameson Motor Co.	Boston
813	C-T Truck	Boston	719-720	Jackson Car	Boston
4-329	Cunningham Son & Co., James	Boston	822-829	Jackson Four Wheel Drive Truck	Boston
844	Curtis Pneumatic Mch. Co.	St. Louis, Mo.	554-555	Jackson, Inc., Charles A.	Boston
			236	Jackson Motor Service Co.	Brighton
5-9	Daniels Car	Boston	819	Johnson, Arthur G.	Cambridge, Mass.
444	Davis & Co., W. E.	Providence, R. I.	121-122B	Jordan Car	Boston
425	Davis Car	Boston	253-254-426	Judd, John L.	Boston
410	Davis Chemical Mfg. Co.	Brockton, Mass.	806	Jumbo Truck	New York
616	Davis-Lynn Storage Battery Co.	Lynn, Mass.			
627	Davis-Watson Mfg. Co.	Nashua, N. H.	711	K-P Products Co., Inc.	New York
340	Day-Elder Truck	Boston	844-885	Keith Trailer Co., Sylvester H.	Middleboro
707-708	Dayton Steel Foundry Co., The	Dayton, O.	330-331-332	Kelly Springfield Motor Truck Co.	Boston
805-812	Denby Truck	Boston	139-145	King Motors, Inc.	Boston
709	Derf Mfg. Co., The	New York	330	Kinney Mfg. Co., The	Jamaica Plain
417	Detroit Pressed Steel Co.	Detroit, Mich.	428	Kissel Car	Boston
104	Detroit Electric Car	Boston	229-230	Kissel Truck	Boston
850	Dickerson, C. A.	Chicago, Ill.	269-271 Inc.	Kress & Co., O. F.	Lawrence, Mass.
547-548	Dixon Crucible Co., Joseph	Jersey City, N. J.			
108-109	Dodge Bros. Car	Boston	234	Lally Sons Co., Eugene F.	Cambridge, Mass.
313-314	Dodge Bros. Truck	Boston	835B	Lambert Trublrut Tire Co.	Waverley, Mass.
111-112	Donovan Motor Car Co.	Boston	255-256	Lampee & Hitchcock, Inc.	Boston
32	Dort Car	Boston	563	Lane Bros Co.	Poughkeepsie, N. Y.
845	Double Seal Ring Co.	Boston	215-215A	Lebon-Kidd Co., The	Boston
875	Duby, John F.	Mattapan, Mass.	147	Leghorn, G. M. Co.	Boston
148, 149, 447	Dunbar, Sanders, Inc.	Boston	34-35	Lexington Automobile Co.	Boston
255-256	Duplex Truck	Boston	147	Liberty Car	Boston
715	Duplex Rim Device Co.	Chicago	883	Lincoln Products Co.	Boston
134-135	Dutton Motor Co., F. A. W.	Somerville, Mass.	119-120-321-322-327-328	Linscott Motor Co.	Boston
445-446	Dyer Co., The G. H.	Cambridge, Mass.	521	Linscott Supply Co.	Boston
			13-17A-235	Locomobile Co. of America, The	Boston
813	Eastern Electric Vehicle Co.	South Boston	887	Lucia Mfg. Co., Inc.	New York
846	Eastern Rubber Co.	Philadelphia, Pa.	714	Luthy Storage Battery Co.	New York
713	Easton Machine Co.	South Easton, Mass.	861	Lyons Ignition Co.	New York
855	Eastern Motor Sales Co.	Boston	881B	Lyknu Polish Mfg. Co.	Boston
847	Economy Timer Co.	Norwalk, Conn.			
703	Elsner Lenk Co.	Boston	15-19	MacAlman, J. H.	Boston
139-145	Elcar Car	Boston	303	MacBride Co., Inc., George W.	Boston
549-550	Electric Storage Battery Co., The	Boston	308	Maccar Truck	E. Cambridge, Mass.
825-826	Emery Co., J. W.	Boston	257-258-259	Mack Motor Truck Co.	Cambridge, Mass.
125-126-127b	Essex Car	Boston	16-20-263-268 Inc.	Maguire Co., J. W.	Boston
			717-718	Malbohm Car	Boston
210-214 Inc.	Fairbanks Co., The	Boston	717-718	Mann Motor Car Co.	Boston
29	Falk-Baker Co.	Boston	8-12	Marmon Car	Boston
382	Farm Tractor & Supply Co.	Boston	311-312	Martin-Parry Corp.	Boston
117-118-132-334			888	Marvel Machinery Co.	Minneapolis, Minn.
335	Fay-Allen Co., C. E.	Boston	425	Massachusetts Motors, Inc.	Boston
216-216a-217-217a	Federal Truck	Cambridge, Mass.	832	Master Trucks, Inc.	Chicago
815	Ferris Car	Boston	117-118-132	Maxwell Car	Boston
608	Flentje, Ernst	Cambridge, Mass.	334-335	Maxwell Truck	Boston
864-865	Flexume Sign Co., Inc.	Boston			

Space	Name	Address	Space	Name	Address
138	McFarlan Car.....	Boston	432	Schraeder's Son, Inc., A.....	Brooklyn, N. Y.
523	McQuay-Norris Mfg. Co.....	St. Louis, Mo.	340-814	Schuh Motors Co.....	Boston
205-206	Mead Morrison Mfg. Co.....	E. Boston	723-724-725-800	Scripps Booth Motor Car Co.....	Boston
17B	Mercer Car.....	Boston	336-337	Selden Truck.....	Cambridge, Mass.
233	Merchants Motors, Inc.....	Boston	231	Service Truck.....	Boston
728-731 Inc.	Metz Sales Corp.....	Boston	240	Sewell Cushion Wheel Co.....	Boston
30	Middlesex Motor Car Co.....	Boston	880	Shotwell Pump & Tank Co.....	Brighton
104	Milburn Electric Car.....	Boston	806	Simmons Co., John.....	New York
853-854	Militor Distributing Co. of N. E.....	Boston	524	Simms Magneto Co., The.....	E. Orange, N. J.
Paul Revere Hall	Mitchell Car.....	Boston	869	Simplicity Mfg. Co.....	Grand Rapids, Mich.
402-403	Minard Co.....	Framingham, Mass.	871	Sinclair Refining Co.....	Chicago
Paul Revere Hall			36-37	Smith & Sons Co., Bryant G.....	Boston
811	Mitchell-Lucas Motor Co.....	Boston	222-223	Smith Wheel, Inc.....	Syracuse, N. Y.
538-539	Mitchell & Smith, Inc.....	Boston	407	Specialty Mfg. Co.....	Arlington, Mass.
30	Monroe Car.....	Boston	419	Splitdorf Electrical Co.....	Newark, N. J.
448-449-450	Moon Car.....	Boston	207-208-209-800A	Springfield Commercial Body Co..	Cambridge
416	Moreton Corp., Walter H.....	Boston	431	Standard Oil Co. of N. Y. (N. E. Dept.)	Boston
618	Morgan Mfg. Co., Inc., The.....	Keene, N. H.	520	Standard Parts Co. of Del., The.....	Boston
102-103	Morse, Alfred Cutler.....	Boston	110	Standard Steel Motor Car Co.....	Boston
557	Mosler & Co., A. R.....	Mt. Vernon, N. Y.	560	Standard Thermometer Co.....	Boston
505-506	Moto-Meter Co., Inc., The.....	L. I. City, N. Y.	21	Stanley Motor Carriage Co.....	Newton, Mass.
705	Motor Accessories, Inc.....	Boston	700	Stanley Co., Inc., John T.....	New York
609	Motor Parts Co.....	Boston	15-19	Stearns-Knight Car.....	Boston
516	Motor Vehicle Publishing Co.....	New York	870	Steel Products Equipment Co., The.....	Boston
	Motor & Accessory Mfrs. Asso'n.....	New York	612	Stenman Elec. Valve Grinder Co..	Worcester
239	Mutual Motor Sales Co.....	Boston	804	Stephens Car.....	Boston
			226-227-228	Sterling Motor Truck Co. of N. E.....	Boston
105-106-107	Nash Car.....	Boston	24-25	Stevens-Duryea Car.....	Boston
315-316-317	Nash Truck.....	Boston	304-305-306	Stewart Automobile Corp.....	Boston
26-27-28	National Car.....	Boston	104-345	Stimpson, E. Y.....	Boston
224-225	Netco Truck.....	Fitchburg, Mass.	562	Story Rubber Corp.....	New York
886	New Britain Machine Co..	New Britain, Conn.	835A	Storti, Angelo B.....	Providence, R. I.
886	New Britain Tractor.....	New Britain, Conn.	111-112	Studebaker Car.....	Boston
816	N. E. American Motor Car Corp.....	Boston	22-23	Stutz Car.....	Boston
866	New England Auto Parts Co.....	Boston	811	Sullivan Truck.....	Boston
424	New England Motors, Inc.....	Boston			
224-225	N. E. Motor Truck Co.....	Fitchburg, Mass.	3	Templar Car.....	Boston
857	New England Savold Tire Co.....	Boston	422	Texas Co., The.....	Boston
137-342-343	New England Velle Co.....	Boston	566	Tidewater Oil Sales Corp.....	Boston
511	New Era Spring & Specialty Co.....	Boston	877	Tigar Bearings Co., Inc., M. George..	Boston
37	New York Lubricating Oil Co.....	Boston	239	Traffic Truck.....	Boston
613	Nielsen Co., V. A.....	Boston	830	Traylor Engineering Mfg. Co..	Conwells, Pa.
412	No-Leak-O Piston Ring Co..	Baltimore, Md.	564	Trexler Co., The.....	Philadelphia, Pa.
424	Noma Car.....	Boston	234	Triangle Truck.....	Cambridge, Mass.
318	Northway Motors Corp.....	Boston	448-449-450	Triangle Motors Co.....	Boston
716	Northwestern Chemical Co., The..	Marietta, G.	706	Triplex Safety Glass Corp. of America, Inc.	New York
319-320	Noyes-Buick Co., The.....	Boston	315-316-317	Troy Trailer, Inc.....	Boston
863	Nu Back Manufacturing Co.....	St. Louis, Mo.			
625	Nutter Electric Equipment Co.....	Boston	819	Ultimate Truck.....	Cambridge, Mass.
			536	Underhay Oil Co.....	Boston
148-149	Oakland Car.....	Boston	712	U. S. Air Compressor Co.....	Cleveland, O.
146	Oldsmobile Car.....	Boston	436	U. S. Light & Heat Corp..	Niagara Falls, N. Y.
333	Oldsmobile Truck.....	Boston	823-828	U. S. Motor Truck Co. of N. E.....	Boston
309-310-831	Oneida Motor Truck Co.....	Boston	874	U. S. Specialty Co.....	Boston
136	Osborn-MacMillan, Inc.....	Boston	858	Universal Top & Body Co.....	Boston
129-130-131	Overland Car.....	Boston	620	U-Sav-Your Mfg. Co..	Warren, Mass.
			522	Utilitor Tractor.....	Boston
1-241-242-251-252	Packard Motor Car Co. of Boston....	Boston	32	Utterback-Gleason Co.....	Boston
127A-128-307	Paige-Detroit Co. of N. E.....	Boston			
802	Paterson Car.....	Cambridge, Mass.	862	Vacuumeter Selling Co.....	Boston
14-18	Peerless Car.....	Boston	433	Vacuum Oil Co.....	New York
541	Perrine Co.....	Boston	137	Velle Car.....	Boston
438	Pettingell-Andrews Co.....	Boston	525-526	Vesta Accumulator Co.....	Chicago
303	Phenix Truck.....	Boston	220-221	Victory Motor Co.....	Boston
16-20	Pierce Arrow Car.....	Boston	824-827	Vim Motor Truck Co. of N. E.....	Boston
263-268 Inc.	Pierce Arrow Truck.....	Boston	873	Vim Unit Remagnetizer, The..	Paterson, N. J.
150	Premier Car.....	Boston			
802	Porter Square Motor Co..	Cambridge, Mass.	561	Walden-Worcester, Inc.....	Worcester, Mass.
868	Postal & Miller.....	Boston	820	Walker-Johnson Sales Co.....	Boston
607	Pressure Proof Piston Ring Co.....	Boston	346	Walker Vehicle Co.....	Boston
601	Presto-Felt Mfg. Co., The.....	Boston	346	Walker Electric Truck.....	Boston
229-230-428	Proctor Fisher, Inc.....	Boston	820	Walker-Johnson Truck.....	Boston
626	Pruyn Bearing Co.....	Boston	808	Walter Transport Sales Co.....	Boston
			551-552	Waltham Watch Co.....	Waltham, Mass.
817	Rauch Lang Electric Car.....	Boston	345	Ward Electric Truck.....	Boston
867	Record Tire Sales Co.....	Boston	529-530	Weaver Mfg. Co.....	Springfield, Ill.
102-103	Renault Car.....	Boston	150	Wells Motor Co.....	Boston
119-120	Reo Car.....	Boston	427	Westcott Car.....	Boston
321-322-327-328	Reo Truck.....	Boston	544	Westinghouse Air Spring Co.....	Boston
215-215A	Republic Truck.....	Boston	430	Wetmore-Savage Co.....	Boston
136	Revere Car.....	Boston			
809	Reynolds Motor Truck Co..	Mt. Clemens, Mich.	244-249 Inc., 269-270-271	White Co., The.....	Boston
235	Riker Truck.....	Boston	429	White & Bagley Co., The..	Worcester, Mass.
33	R. & V. Motors of New England.....	Boston	887	Whiting & Comstock.....	Hartford, Conn.
102-103	Roamer Car.....	Boston	879	Whittredge Portable Steel Bldg. Co...	Lynn
105-106-107-315-316-317			876A	Wight, Austin J.....	Boston
817	Rockwell, Inc., C. P.....	Boston	509	Willard Storage Battery Co.....	Boston
113-114	Rommelfanger, N.....	Boston	202-203-204	Will-Hall-Sutherland Motors, Inc.....	Boston
440	Ross, Inc., R. R.....	Boston	129-130-131	Willys Knight Car.....	Boston
513-514-515	Ross Gloss Co.....	Auburndale, Mass.	534-535	Wilson Co., John V.....	Boston
38-231-801	Rowe Calk & Chain Co., The	Plantville, Conn.	553	Wilson, K. R.....	Buffalo, N. Y.
	Russell Co., The, W. L.....	Boston	821	Wilson Motor Truck Sales Co. of N. E.,	Boston
			8-12	Wing, Frank E.....	Boston
611	Salman, John A.....	Boston	878	Winsor & Son, Alfred.....	Boston
872	Sanderson Co., E. P.....	Cambridge, Mass.	825-826	Winther Truck.....	Boston
341	Sandow Motor Truck Co. of N. E.....	Boston	6-10	Winton Co., The.....	Boston
255-256	Sanford Truck.....	Boston	421	Wire Wheel Corp. of America..	Buffalo, N. Y.
721-722	Sargent & Ham Co.....	Boston	805-812	Woodbridge Co., Inc.....	Boston
29	Saxon Car.....	Boston	404	Wright "Name On" Robe Co..	Waterville, Me.

Eaton New President of Standard Parts Organization

Cleveland, O., Feb. 11.—Large expansion of the Standard Parts Co. is planned according to announcement made by



J. O. Eaton, New President of the Standard Parts Co., Cleveland, O.

President John Sherwin of the First National Bank of this city. The capital of the concern has been increased \$6,000,000, this having been provided by Cleveland banks and other local financial interests.

Arrangements have been completed so that the operation of the company will be directed by J. O. Eaton, president of the Eaton Axle Co., a new \$5,000,000 concern that is now erecting a plant and making ready to begin production of truck and car axles on a large scale.

The election of Mr. Eaton president of the Standards Parts Co. will make no

changes in the plans of the Eaton Axle Co., for he will continue to direct the preparatory work of establishing the Eaton Axle plant.

Statement is made by Mr. Eaton that no changes in the personnel of the various manufacturing plants of the Standards Parts Co. are contemplated, and that progressive developments in the operations of this concern and the Eaton company are to be made as early as these can be brought about. An expansion of both common and preferred stock of the Standard Parts stock will shortly be tendered to the present stockholders, and later on will probably be offered to the public. The additional capital will make possible the development of the different units of the company, the improvement of products and extension of its sales organization.

THREE NEW EXECUTIVES FOR TORBENSEN AXLE CO.

The association of three new executives in the production division of the Torbensen Axle Co., Cleveland, O., is announced by Vice President Robert Enos, which is expected to considerably strengthen the manufacturing organization of the company.

These are J. D. Smith, as manufacturing manager, who was formerly with the Timken Detroit Axle Co., as works manager; G. W. Veale, formerly production supervisor for the Timken Detroit company, to be production superintendent, and G. W. Carlson, engineer, formerly with the Timken company, who will serve in the same capacity.

All have served in the axle industry for years and have become known for their capacity in their several specialties, and their united endeavors will no doubt materially promote the activities of the Torbensen plant.

An extra dividend of a half per cent. has been declared by the Peerless Truck & Motor Corporation, Cleveland, in addition to the regular quarterly dividend of 1½ per cent. on the capital stock.

GOODYEAR SALES ORGANIZATION PROMOTIONS.

I. R. Bailey has been advanced from the management of the mechanical goods department of the Goodyear Tire & Rubber Co. to assistant sales manager for the company and D. R. Burr, who was Mr. Bailey's assistant, has been made



I. R. Bailey, Assistant Sales Manager, Goodyear Tire & Rubber Co.

manager of the mechanical department. Mr. Burr was first assistant manager of the mechanical goods department for the Chicago district, joining the company in 1913. In 1916 he was transferred to Akron to assist Mr. Bailey. He recently returned from Australia, where he made an extensive industrial survey, being absent for 11 months.

C. A. Jones has been appointed assistant to Mr. Burr. He has been with the company eight years, and previously was with other rubber concerns estimating costs of specialties and assistant in charge of production. He has been connected with the mechanical department since he joined Goodyear organization.



G. W. Veale, Production Superintendent, Torbensen Axle Co.



G. W. Carlson, Engineer, Torbensen Axle Co.



J. D. Smith, Manufacturing Manager, Torbensen Axle Co.

"MISS KALAMAZOO" DEMONSTRATES AT CHICAGO SHOW.

During the truck show at Chicago visitors at the Kalamazoo exhibit were surprised to meet with an interesting young woman who, garbed in the conventional costume of a male driver, was



"Miss Kalamazoo," a Girl Whose Mechanical and Technical Knowledge Surprised Visitors at the Kalamazoo Truck Exhibit at the Chicago Show.

a particularly active member of the sales organization of the Kalamazoo Motors Corporation. She was known as "Miss Kalamazoo" and besides being a clever driver she is said to be extremely well informed mechanically and technically. Those who first met her were not inclined to take her selling advances seriously, but they frequently learned that her knowledge was decidedly superior, and she was qualified to sell either trucks or transportation.

General Sales Manager H. G. Stiles of the company was decidedly impressed by the prospects developed by the show, which he believed to be extremely satisfactory, and much interest was evidenced in the Kalamazoo machines, which are built in 1½, 2½ and 3½-ton sizes. These are constructed of high grade units, with unusual factors of safety. The trucks are sold completely equipped, with electric lamps, starter and horn, all-steel enclosed cab, motometer, hub odometer, radiator guard and towing hooks in addition to the standard equipment.

TRUCK SERVICE DEPENDS UPON JUDGMENT.

The owner usually gets out of a truck approximately what he puts into it in the way of care, and if his judgment is good, and usually it is developed by experience, he will see to it that the machine is well maintained.

There are those who will say that this is theory, but the service afforded by the first Federal truck sent to California, which was delivered June 30, 1911, to the Coast Manufacturing & Supply Co., at Livermore.

The driver assigned to the truck was Joseph Diaz, and he has driven it continuously. The truck has been worked hard and in 1914 it was wrecked by "A main line meeting with the Stockton Flyer at the Trevarno crossing," to quote T. W. Harris, president of the company.

"But after the frame was straightened and a few other damaged parts repaired, the old boat was soon

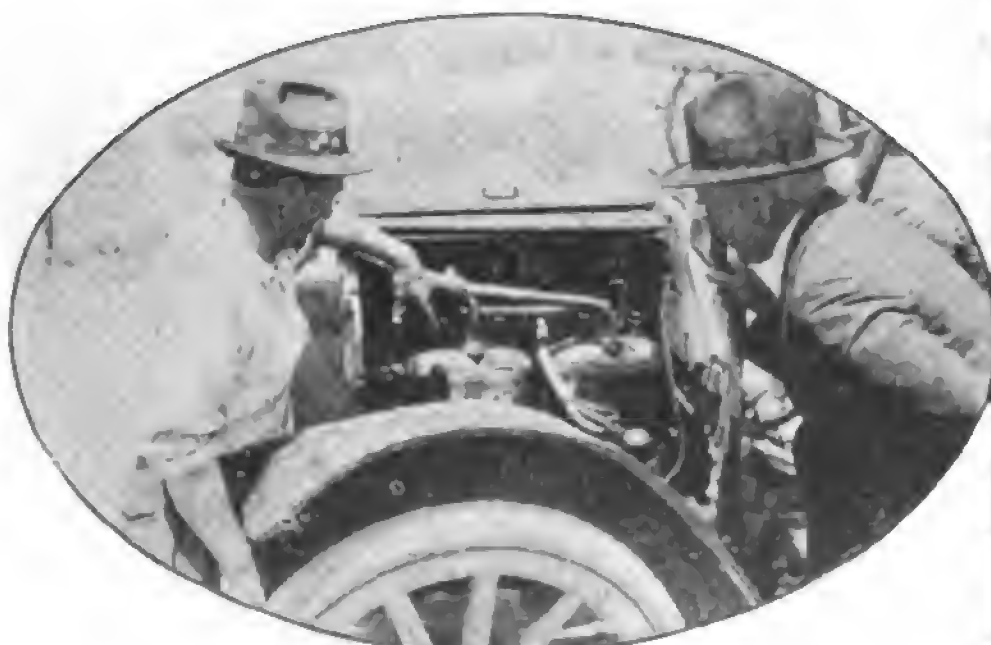
back in commission and has given excellent results since."

The first Federal truck sold on the Pacific coast is in use at Portland, Ore.; the first Federal truck sold in California is used daily, and the first Federal truck built is operated by the National Pop Corn Works at Lynn, Mass.

In contrast with these machines one may note the latest Federal truck, a one-ton load capacity chassis, which is regarded as being the best vehicle of its rating ever produced. It is designed to have every essential truck quality as demanded by expert transportation men; it is really a heavy duty truck for light loads and has been constructed to have endurance, speed and economy. It is equipped with pneumatic tires, that it may be driven to a speed of 25 miles an hour with less mechanical wear than if driven 15 miles an hour or less on solid tires; the speed is governor controlled, the frame is pressed steel, the wheels are a steel disc type, the driving and braking stresses are taken by spring-buffered radius rods, the electric dash lamps are mounted on swivels so that they can be directed wherever the light is needed, the generator is a special type, the storage battery is completely protected and mounted so that the shocks are absorbed by its supports, the power tire pump is thoroughly proven, the dash and driver's seat are designed to have exceptional endurance, and great care has been taken to insure thorough lubrication. Withal, the chassis is extremely simplified, is very accessible, and built to have extreme endurance.



The Highly Perfected Federal One-Ton Truck, Built for Fast Service and Equipped with Pneumatic Tires.



The First Federal Truck Sold in California: At Left, Driver J. Diaz, and the Owner Looking "Under the Hood;" at Center, a Typical Load for the Veteran; at Right, the Only Man to Drive the Machine.

First Capitol Truck Exhibit to Be at Boston Show

One of the Boston show exhibits in which there will be unusual interest is that to be made by the Capitol Motors Corporation, Fall River, Mass., which



William Krafve, Designer and Production Manager, Capitol Motor Truck Co.

will include several truck chassis. This will be the first exhibition of Capitol trucks, although they have been in service development for a considerable period.

The Capitol truck design was developed by William Krafve, who is well known in the automotive industry, for he has been active in it for more than 21 years, being at different times associated with the Cadillac, Buick, Regal, Koehler, Republic and Ohio companies, his experience being with all types of cars and trucks.

Mr. Krafve was born in Sweden 46 years ago and came to this country when four years of age. He worked in the Cadillac factory when the cars had one-cylinder engines, and later when the four-cylinder machines were produced. He was the service representative of the company in New England. He has intimate knowledge of the Leland, Ford and Willys companies policies and methods with reference to production and service. He has had long experience in car and truck designing and construction, in driving, in repairing, in loading and unloading freights, and in the sales and service organizations of large truck concerns.

In the development of the Capitol chassis he has sought to create what will afford maximum service at minimum maintenance cost and claim is made that the result is extremely satisfactory. He has invested his entire capital in the Capitol truck, designing and building the first machine himself. There is decided originality in the design, he having been granted four patents covering the engine

suspension, radiator suspension, whole frame construction and rear springs, and application for patents on a weather-proof cab and a combination dash and tank are pending. Several other features of construction will also be protected by patent.

Capitol trucks are now being built in one, 2½ and five-ton load capacities. The output of the factory has been disposed of locally and the sale of these machines has largely been influenced by the exceptionally good service obtained by the owners.

RAPID GROWTH OF FULLER & SONS MANUFACTURING CO.

At the annual meeting of Fuller & Sons Manufacturing Co., Kalamazoo, Mich., manufacturer of transmission gearsets, control sets and multiple disc clutches for power trucks, held Jan. 22, the old board of five directors was re-elected and the following officers were elected for the present year: Frank D. Fuller, president; L. C. Fuller, vice president and chief engineer; W. P. Fuller, secretary and sales manager; W. E. Upjohn, treasurer.

Statement was made that the actual shipments for 1919 were 82 per cent. in excess of those of 1918, totaling almost \$2,500,000. The shipments for January were far in excess of the 1919 average and the orders unfilled will force capacity production for the present year.

Contract has been made for a four-story reinforced concrete building 100 by 60 feet, which will replace an old four-story brick structure used by the company since its establishment, and when this is completed the plant will consist of buildings not more than five years old. The temporary wooden warehouse is to be replaced by a steel building 100 by 30 feet. The company is now establishing a gray iron foundry, which will be started March 1.

The company has purchased a tract of 10 acres just north of the present plant to provide for future expansion. The land is a quarter mile long and 320 feet wide, with the Grand Rapids & Indiana Railway main line at the west side and the Grand Trunk Railway at the east side. A large office building will be erected on this tract within a year.

Clark Equipment Co.'s New Axle Plant at Battle Creek

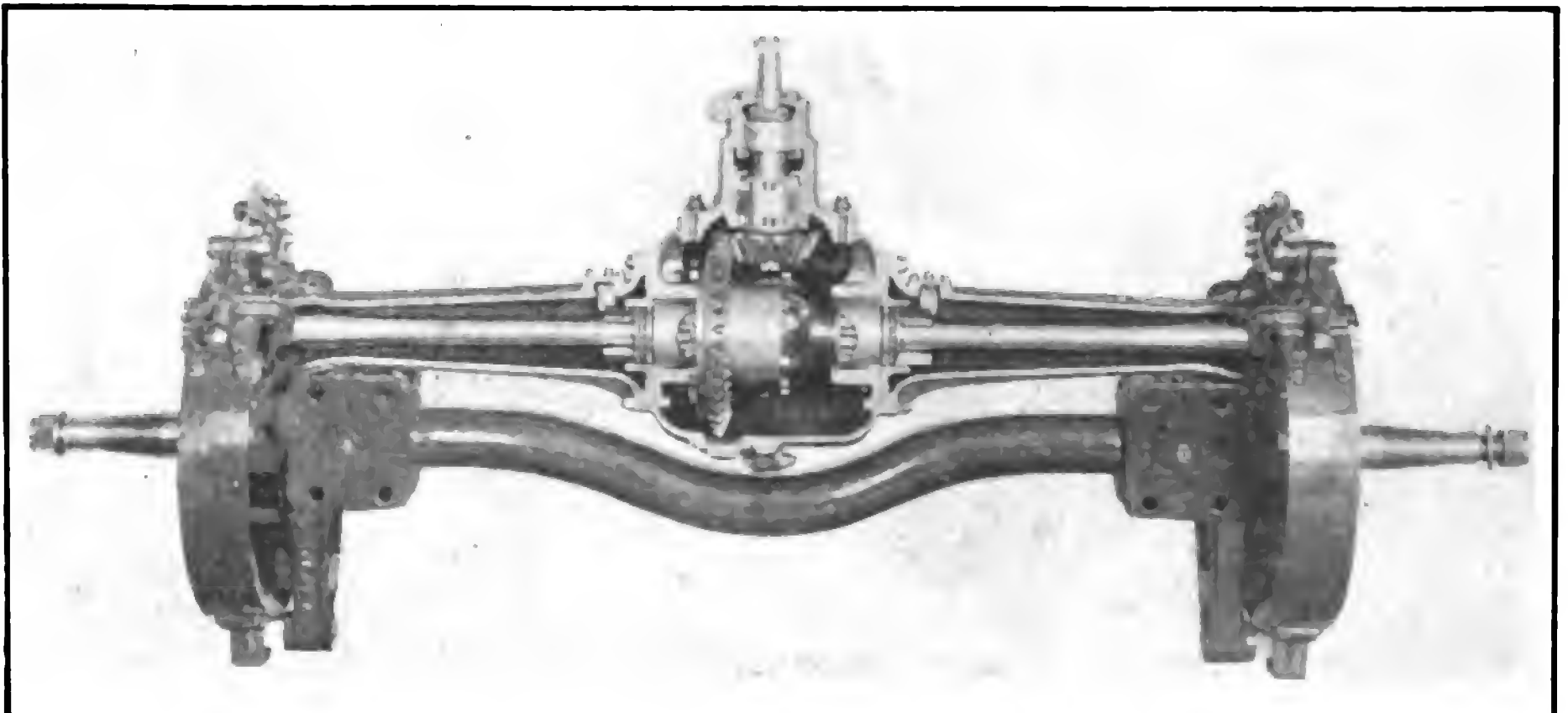
Buchanan, Mich., Feb. 5.—Demand for Clark internal gear axles and steel wheels, produced by the Clark Equipment Co., Buchanan, Mich., has so greatly exceeded the capacity of the present plants that a new works will be built at Battle Creek, Mich. The location was determined because of the scarcity of labor at Buchanan.

The new plant will be on a site of 23 acres, having a half mile frontage on the Michigan Central railroad and the Battle Creek and interurban trolley line, which insures ideal shipping and receiving facilities, and the location will be such that handling of raw materials and finished products will be minimized.

The first buildings will be 450 by 100 feet and 450 by 50 feet respectively, with an independent power house and a two-story office building. The structures will be fireproof, of brick and steel, and especial attention has been directed to daylight light, ventilation, heating and sanitation, and to what will make for the comfort and convenience of the workers. Billingham & Cobb of Kalamazoo is the engineer and architect.

The shops will be equipped with every facility that will make for high grade and economical production and with what will economize time and labor. The same unique features of design and decoration which have made the Clark plant at Buchanan a place of park-like beauty, comparable to "a college campus in spring time," will be adopted in the development of the new works, and there, as well, the same progressive policies of plant management and employees' profit sharing will be adopted.

The production plan will require the service of 500 men at the start and the plant will be devoted exclusively to producing Clark axles. The units will be machined and assembled complete, the same as at Buchanan. All the sales, engineering, purchasing and general administration will be handled through the general offices at Buchanan. Work on the first buildings will be begun March 1 and these will be completed about June 1.



The Latest Type Clark Internal Gear Drive Axle, the Countershaft in Cross Section to Show Construction.

ROSS STEERING GEARS

PREDOMINATE at Motor Truck Shows

Whether you manufacture, sell or buy motor trucks, it must be deeply significant to you that one steering gear predominated overwhelmingly on motor trucks at the shows. Taking the Commercial Vehicle lists of exhibits, 44 out of 70 exhibitors at New York, and 47 out of 65 exhibitors at Chicago, use Ross Steering Gears as standard equipment.

At New York

63%

At Chicago

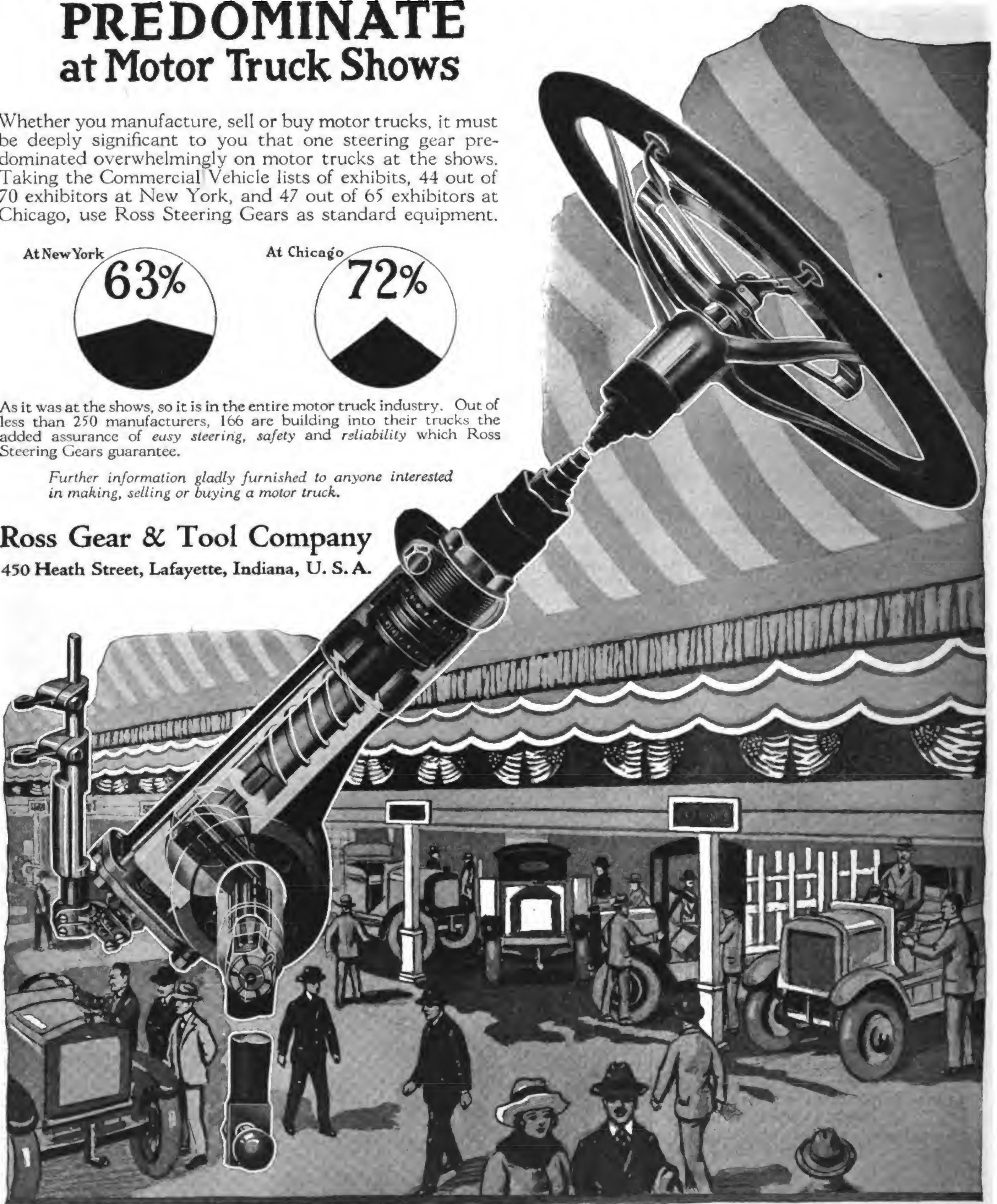
72%

As it was at the shows, so it is in the entire motor truck industry. Out of less than 250 manufacturers, 166 are building into their trucks the added assurance of *easy steering, safety and reliability* which Ross Steering Gears guarantee.

Further information gladly furnished to anyone interested in making, selling or buying a motor truck.

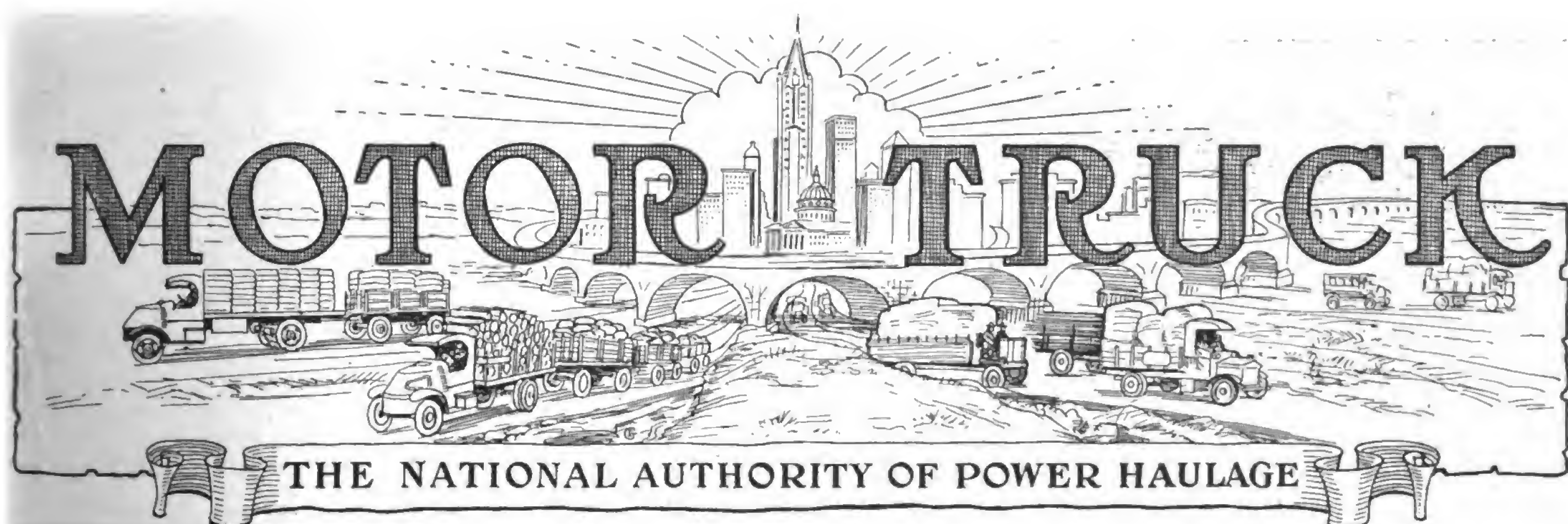
Ross Gear & Tool Company

450 Heath Street, Lafayette, Indiana, U. S. A.



The Steering Gears that Predominate on Motor Trucks

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)



VOL. XI. NO. 3.

PAWTUCKET, R. I.

MARCH, 1920.

BOSTON TRUCK SHOW SALES EXCEED ANY PREVIOUS RECORD

Demand Makes Deliveries a Serious Problem—Exhibition Largest Ever Organized — Buying Demonstrates the Possibilities of Combination Car and Truck Exploitation by Dealers.

WHETHER judged by attendance, by the number of exhibitors, the sales consummated or the keen interest that presages future buying, the 18th annual show of the Boston Automobile Dealers' Association and the Boston Commercial Motor Vehicle Association, which was inaugurated March 13, is the largest and undoubtedly will be the most productive exhibition ever organized in New England. And this statement is a modification of the claim of the management that the Boston show will be the acknowledged premier automotive exposition of the country of the year.

Experience with power vehicle exhibitions has proven conclusively, according to Manager Chester I. Campbell, that the combination show (passenger and freight carrying machines) more generally meets the desires of the people as a whole. And this is borne out by the attendance, which thus far has largely ex-

ceeded that of any previous show.

The number of exhibitors is in round numbers 100 more than ever before made display, and practically an equal number of applicants for space were denied, al-

vidual sales, for it is held at a season of the year when the demand for machines of all kinds is greatest, and it attracts buyers from New England and the Canadian provinces. This year this de-

mand is greater than ever before, and being favored by ideal spring weather, despite the fact that this section of the country has been snow bound for upwards of six weeks, and is now threatened with floods from unprecedently swollen rivers, the people have literally invaded Boston and are buying cars and trucks in such numbers that without exception the dealers are swamped with orders and making delivery has become the main problem.

The manufacturers' representatives, distributors and

dealers are wonderfully enthusiastic of the prospect for business. The buying has surpassed all expectations and the season has just opened. The industrial activity and the larger in-



Looking Through the East Aisle of the Truck Department in the Basement Under Grand Hall, Decorated in Patriotic Colors.

though at least a full acre of floor area was utilized in the South Armory.

The Boston show has always been known as the most productive of all exhibitions from the large volume of indi-



The Exhibit of the Selden Truck Corporation Included the Original Vehicle on Which George B. Selden Was Granted the First Automotive Patents.

comes of the people has seemingly justified a greater turn over of machines than was ever before experienced, and the unusual winter has brought to very large numbers a keen realization of the necessity of having control so far as possible of individual movement. Not only this, the suspension or curtailment of public service, the reduction of trains, and the certainty of increased transportation charges of all kinds has impelled thousands to depend upon themselves, and this means greatly increased use of cars and trucks.

There will be a very large increase of trucks in all parts of New England. This applies to the agricultural sections as well as to the towns and cities, and there is expectation of a greater number of sales to those engaged in farming than in previous years.

The principal manufacturers of the truck industry are realizing fully the possibilities of New England as a market, and they have as a whole undertaken to exploit it more intensively. They understand that these six states own more trucks in proportion to the number of inhabitants than any other part of the country. They now know that the industrial conditions are different than in all other states and that highway transportation must be developed between commercial centers and the shipping and receiving terminals. They have become convinced that they must have well established and responsible representatives in the larger cities, and that large territory unless operated by a branch or distributor and numerous dealers will not be productive because of the increased cost of selling.

Many Exhibiting for First Time.

It was this desire to establish themselves in New England that caused a number of concerns that had not previously exhibited in Boston, and a good sized group of comparatively new concerns to make display. The truck manufacturers making exhibit numbered 69, which was a larger number than showed at either New York or Chicago, which shows had exclusive departments and in

which the industry concentrated its endeavor, through the National Automobile Chamber of Commerce, to stimulate interest and promote the use of cargo-carrying machines.

Following the custom of years the show was staged at Mechanics' building, Huntington avenue, and in accordance with precedent the basement of the building under Grand and Exhibition halls was given over to trucks and a few exhibits of accessories, equipment and supplies. This departmentizing of the show was admirably arranged. In all there is 115,000 square feet of exhibition floor space in Mechanics' building, and months ago the number of applications was such that to provide for exhibitors the cafe was discontinued and the area allotted. All of Paul Revere hall was disposed of in small stands, and the area of department C, under the stage of Grand hall, was similarly apportioned to applicants whose products were essentially for the use of truck owners.

Then came the problem of expanding

the show, and in conjunction with the Y-D Club, an organization of World War veterans, which is to establish a club house in Boston for those who served in the famous Yankee Division of the American Expeditionary Force in France, authorization was obtained to use the South Armory in Irvington street, a structure with a splendid drill shed, which brought the available exhibition space up to approximately 165,000 square feet. Never before was the armory obtainable and through the co-operation of the club and the show management the organization received substantial benefit and considerably more than an acre of space was available for exhibitors.

The location of the armory is comparable with that of the First Regiment armory in Chicago, which has been used for years for the Chicago show, and the two divisions of the exhibition are two blocks apart, a distance that has not been found to lessen the interest of buyers. Naturally, the objective of all visitors to the show is the main building, and yet the character of the armory display is such that it is not neglected by those who are seriously considering either cars or trucks.

Mostly Buyers Visited Armory.

The attendance has thus far filled Mechanics' hall to overflowing daily, and evenings the sale of tickets has been suspended at intervals because of the congestion of every department until the aisles and spaces have been cleared somewhat. In fact during parts of the afternoons and evenings the activities of the exhibitors have been restricted owing to the crowded stands and aisles. At the armory the attendance was smaller as compared with the main exhibition, which was at first disappointing to the exhibitors, but when they learned that practically every visitor was interested and a prospective buyer and was not satisfying curiosity, they realized that they were not handicapped by congestion and could make practically all their time productive. By the middle of the week the



The South Armory Drill Shed, Given Over to Cars, Trucks and Accessories, Seen from the Balcony of the Head House.

exhibitors in this department were convinced that they were doing exceedingly well, and there is reason to believe that by the close of the show that they will be entirely satisfied.

This satisfaction is a very important subject because there is no possibility of increasing the number of stands in Mechanics' hall for future shows save by reducing the areas, which would cause protest at least from exhibitors who have had practically the same space from year to year. This year every foot of space that could be utilized has been allotted, and the limitations have been reached unless the exhibitors are restricted to a specific number of vehicles, which would seemingly be unsatisfactory.

Exhibition Spaces Minimum Area.

This year the spaces in the truck department in Mechanics' hall have been reduced as compared with other shows, and the machines have been placed so closely that there is comparatively little open area about them for the salesmen and those seeking conference with them, and there is reason to believe that the exhibitors and visitors would be better satisfied with specimen chassis of standard design, though the desire of manufacturers who build a series of sizes is to display one or more of each.

The management of the show has always departmentized the trucks and passenger cars, but the exhibitors of accessories, equipment, supplies, parts, etc., have in past years been assigned some space in the truck department without reference to the types of vehicles for which the exhibits were generally used. This year the truck department has been given over entirely to what may be regarded as truck exhibits, and the exhibitors on the second floor of the main building are those who can be regarded as being included in the car department.

In the armory, however, the show is practically general, both trucks and cars having the center section, with the small exhibitors located in wall spaces. This arrangement is advantageous, as in circling the drill shed all of the exhibits must be seen, and all have equal sales opportunity.

Show 69 Makes of Trucks.

The total number of makes of trucks displayed is 69, showing upwards of 200 chassis and complete machines, in 15 different sizes, ranging in load capacity from 1000 pounds to 7½ tons, and the greater number of these are equipped with bodies. In Mechanics' hall are 48 different makes and two conversion units, and in the armory 21 different makes. In addition to these there are two large body displays, one trailer, one farm tractor and three so-called garden tractors. In the armory there is also one display of truck bodies, two makes of trailer, one farm tractor and four makes of garden tractors. In the armory was also an exhibit of the United States army, which is seeking recruits for all branches of the service, but principally for Motor Transport Corps.

Of the 69 trucks shown five are electric, of which the C-T, built by the Commercial Truck Co. of America; the Oneida, built by the Oneida Motor Truck

Co. of Green Bay, Wis.; the R & L, built by the Rauch & Lang Co., Springfield, Mass., and the Ward, built by the Ward Motor Vehicle Co., Mt. Vernon, N. Y., are all new to Boston. The Walker, produced by the Walker Vehicle Co., Chicago, has been seen at previous shows. The Oneida company, by the way, is the only concern that is manufacturing both electric and gasoline machines. The Oneida electric truck shown is two-ton load capacity and it is driven by the rear wheels by the Krohn patent drive, which is claimed to be exceptionally efficient and economical. It is driven by a motor enclosed in the rear axle housing, this construction following that of the Walker, but the entire principle of power transmission is different.

Many New Trucks Shown.

The trucks that are for the first time shown in Boston include the Jumbo, Master, Oldsmobile, Oneida, Paige, Sandow, Sterling, Sullivan, Traffic, Transport and Winther, and what may be classified as the new trucks are the All-American,

Buda engine and the latter a Continental, both of which are rated at 22.50 horsepower. The wheelbase is 140 inches. The engines are equipped with Elsemann magnetos and Zenith carburetors. The radiator has a cellular cooling section with cast top and bottom tanks and is mounted on cushions and floating spring suspension. The engine is assembled as a unit power plant with a Fuller dry disc clutch and a Fuller selective sliding gear transmission gearset having three forward speed ratios and reverse. The drive is through a tubular shaft with two universal joints.

The frame is steel channel section with four cross members and is semi-flexible, the front member being removable to afford easy access to the engine. It is suspended on Perfection semi-elliptic springs, the rear set being mounted so that they absorb the driving and braking stresses. The steering gear is a L-avine screw and nut irreversible type located at the left side. The control conforms to standard practise. The brakes



A Section of the Second Floor Over Exhibition Hall, in Which Is Shown a General Display of Accessories and Equipment.

Briscoe, Capitol, Huffman, Jackson (four-wheel driven), Northway, R & L, Reynolds, Traylor, Ultimate and Walker-Johnson. To the last specified class may be added the Walter, which is now driven by what is known as the suspended drive, the shaft having practically straight line transmission to the countershaft of an internal gear axle that is suspended from the frame above the axle, the drive being through universal joints close to the wheels in the countershaft.

Of the new trucks the Briscoe is the model 34, which is equipped with a four-cylinder engine that is rated at 34 horsepower, and it has a wheelbase of 121 inches. The load rating is one ton.

Huffman 2¾-Ton Truck.

The Huffman truck is built to one capacity, 2¾ tons, but with two methods of power transmission. The model C is driven by a Torbensen internal gear and the model B by a Standard worm shaft and worm wheel. The former has a

of the model B are both internal expanding, but those of the model C are internal expanding and external contracting. The wheels are shod with solid tires, 34 by 3½ inches forward and 34 by six inches rear. The chassis are sold with driver's seat, fenders and running boards, oil dash and tail lamps, rear towing hooks, radiator guard, horn, governor, tool box, tool kit and jack. Pneumatic tires, bumper, lighting equipment, open or closed cab, tops, bodies and other equipment is classified as extra.

Jackson Four-Wheel Drive Truck.

The Jackson truck is a four-wheel driven type that is built to have 3½ tons load rating, and apart from the power transmission system it conforms to standard practise. The wheelbase is 150 inches. The engine is a Continental Red Seal type having cylinder bore of 4½ inches and stroke of 5½ inches, that is rated at 32.40 horsepower by the S. A. E. formula. The cylinders are cast in pairs

and the heads are detachable. The lubricating system is full pressure.

The clutch is a Borg & Beck dry plate type and the transmission gearset is a Jackson design having four forward speed ratios and reverse, located amidships. The drive shafts extend from this to the front and rear axles, which are also Jackson construction, and are full floating, these being bevel gear type. The driving shafts and universal joints are Spicer products. The frame is pressed steel channel section suspended on Standard Parts springs. The steering gear is a Ross. The service brake is internal expanding in drums on the rear wheels and the service brake is external contracting on the drive shaft.

The radiator is a Long product having cast top and bottom tanks and finned tube cooling section. The engine is equipped with an Eisemann magneto generator and a starting and lighting system, a Stromberg carburetor and a Pierce governor.

The Northway trucks are built in two

The pressed steel frame is suspended on Detroit Pressed Steel semi-elliptic springs. The B-2 chassis has the Hotchkiss system of spring installation, but the B-3½ chassis has radius rods that take the driving and braking stresses. The Ross steering gear is placed at the left side and the service and emergency brakes are an internal expanding type operating within drums on the rear wheels. The wheels are steel, Clark make, and the forward set is shod with 36 by five-inch solid bands and the rear set with 40 by five-inch dual tires.

Oneida Two-Ton Electric Truck.

The Oneida electric truck is at present built in one size only, with load capacity of two tons, and it is an underslung battery type, which may be equipped with 44 15-plate lead-acid cells assembled in 12 four-cell trays, or 60 A-8 Edison cells, or with smaller or larger batteries as may be required.

The motor is a series wound single machine, mounted on annular ball bearings, and it is assembled with the Oneida

The wheelbase is 111 inches and the tread 56½ inches. The wheels are artillery type, of wood, the front set shod with 34 by four-inch solid tires and the rear set shod with 34 by six-inch tires.

The wiring is extra large and the equipment includes a safety switch and a Sangamo ampere-hour meter, electric dash and tail lamps, electric horn, hub odometer, tools and charging plug. The speed is limited to 15 miles an hour under load.

Reynolds Worm Driven Trucks.

The Reynolds trucks are built in four sizes, 1½, 2½, 3½ and five-ton load capacities, and in general follow the design of the class B type adopted for the United States army. The engine is a four-cylinder construction with the cylinders cast en bloc, those for the two smaller sizes being L-head and the two larger I-head. The cylinder bores for the smaller engines are four and 4½ inches, with strokes of 5¼ and 5½ inches respectively, these being rated at 25.60 and 28.90 horsepower by the S. A. E. standard, but these are claimed to develop 39.75 and 44.50 horsepower. The engines for the larger chassis have 4½ inches cylinder bore and 5½ inches stroke, with horsepower rating of 32.40. The maximum horsepower developed by this unit is claimed to be 54. The crankshaft is a three-journal type and the diameter is unusually large. The crankcase is cast in two sections, a forward extension of the upper section housing the timing gearset and extensions of both sections enclosing the flywheel. In the base of the lower half is the oil reservoir, with a large hand hole for removing the oil filter and the pump and for draining the reservoir.

Every bearing of the engine is lubricated by a circulation of oil through ducts forced by a double-acting pump driven by the crankshaft. The oil capacity is eight quarts. The oil pressure of the system ranges from five pounds at minimum to 25 pounds at maximum speed, insuring that lubricant will reach every moving part. The throw-off from the crankshaft lubricates the cylinder and piston walls, the cams and valve tappets.

The engine is cooled by water circulated by a centrifugal pump through the cylinders and a large radiator with cast top and bottom tanks with removable vertical tube cooling section carried on cushions on the front cross frame member and by a fan driven by a flat belt. The engine is equipped with a Hinkley governor, a Stromberg carburetor and a Bosch magneto, with a Westinghouse lighting and starting system, the Vesta battery being mounted on a platform suspended on double-acting springs in a steel box on the right step. The clutch is a Reynolds design, a dry plate type with graphite bronze and annular ball thrust bearings. The entire assembly is mounted on three points.

The transmission gearset is a Reynolds unit, a selective sliding gear construction having four forward speed ratios and reverse mounted amidships. The gearset is fitted with ball and roller bearings and can be equipped with power



Another Glance Through an Accessory Department Aisle in Which an Exceptional Display Is Made by the Manufacturers.

sizes, two and 3½-ton capacities. They are constructed to one design and differ only in proportion of parts. They are specified as B-2 and B-3½. The engine is built by the company and the same size is in both chassis, it having cylinder bore of four inches and stroke of six inches and rated at 25.60 horsepower by the S. A. E. formula. With it is assembled as a unit a Fuller dry plate clutch and a Fuller sliding gear selective type transmission gearset.

The engine is cooled by water circulated by a centrifugal pump through the cylinder jacket and a G-O radiator with cast top and bottom tanks and a cellular cooling section and by a belt driven fan. It is equipped with a Wagner starting and lighting and ignition system, manually operated, with a Schebler carburetor and a Pierce governor. The driving shaft and the universal joints are Spicer constructions and the rear axle is a Sheldon semi-floating worm shaft and worm wheel product. The front axle is built by the Standard Parts Co.

patent line drive (Krohn patent) as a unit in the rear axle. The rear axle is a full floating type and the motor and unit are mounted on annular ball bearings and are lubricated by an oil bath. The assembly is readily accessible by removing the cover plate on the rear of the axle housing.

Claim is made that this drive is extremely efficient and consumes very little electric energy. The rated mileage is from 40 to 60 miles to the battery charge. The speed is controlled by a continuous torque drum type controller, having five speed ratios forward and reverse, that is mounted under the driver's seat, the lever being at the left side of the driver and the reverse pedal in the footboard.

The pressed steel channel section frame is suspended on semi-elliptic springs. The front axle is an I section steel drop forging with large spindles fitted with Timken roller bearings. The steering gear is a worm and nut type. The brakes are internal expanding, operating within drums on the rear wheels, that are actuated by independent pedals.

take-offs for a hoist, winch or tire pump. The clutch shaft is equipped with Daimler type fabric flexible joints, and the large tubular main shaft is coupled to the pinion shaft of the Reynolds made semi-floating type worm shaft and worm wheel axle.

The front axle is an I section steel drop forging. The frame is steel channel section and is semi-flexible and is suspended on semi-elliptic springs, having bronze bushed eyes, the springs taking the thrust and torque of the rear axle. The steering gear is a screw and nut type at the left side.

The wheelbases of the trucks in order of sizes are 144, 154, 176 and 176, standard, with optional increase of 20 inches for each chassis when desired. The tire sizes are 36 by 3½ inches forward and 36 by six inches rear for the 1½-ton chassis, 36 by four inches forward and 36 by eight inches rear for the 2½-ton chassis, 36 by five inches forward and 36 by five inches dual rear for the 3½-ton chassis, and 40 by six inches dual rear for the five-ton chassis.

The standard equipment includes cab, curtains, windshield, electric lights, battery, generator, engine starter, horn, hub odometer, radiator guard, front bumper, towing hooks, spring drawbar tailer connection, metal wheels, auxiliary vacuum fuel feed, motometer, front fenders, steps, battery box, tools, tool box and jack.

Traylor and Walker-Johnson Trucks.

The single Traylor chassis shown is rated at 2½ tons load capacity and is built by the Traylor Engineering & Manufacturing Co., Cornwells, Pa., and it has a four-cylinder engine that is claimed to develop 40 horsepower and is 150 inches wheelbase. This exhibit also includes a "6-12" farm tractor and cultivator. The unit is convertible by changes that can be quickly made, and claim is that with it an owner has a combination machine that will serve the purpose of two independent units at the cost of one.

The Walker-Johnson Truck Co., Woburn, Mass., made its first show appearance, although these trucks have been produced for a considerable length of time. The chassis is rated at 2½ tons and is constructed from a series of the best construction units obtainable. Walker-Johnson trucks are now well known in New England. One of the special claims made for this machine is the character of factory service afforded to owners.

Ultimate Trucks in Two Sizes.

The Ultimate trucks, built by the Vreeland Motor Co., Newark, N. J., are shown in two sizes, model A, 1½ tons capacity and model B, 2½-3 tons capacity. Strong claims are made for the manner of constructing these chassis, which are built of standard units with extreme care in designing to obtain long service life. The machines are built to a single design, the main difference being in proportions of parts. The engines are a four-cylinder type with detachable head, that of the smaller chassis having cylinder bore of four inches and stroke of 5½ inches, and of the larger chassis having cylinder

bore of 4¼ inches and stroke of 5½ inches, that are rated at 25.60 and 28.90 horsepower respectively. The engines are cooled by water circulated by centrifugal pumps, the radiators have cast top and bottom tanks, with removable finned tube cooling sections, and the lubrication is by pressure feed to all bearings with supplementary distribution by the throw-off from the crankshaft. The clutch is a multiple dry disc type assembled with a selective sliding gear transmission gearset having four forward speed ratios and reverse as a unit with the engine. The drive is by a large tubular shaft to the semi-floating worm shaft and worm wheel axle equipped throughout with annular ball bearings. The forward axle is a steel drop forging. The frame is pressed steel channel section that is suspended on semi-elliptic springs. The driving and braking stresses are taken by radius rods. The steering gear is a screw and nut construction, located at the left side. The control is conventional and the brakes are both internal expanding, operating with drums on the rear wheels. The wheelbase of the smaller chassis is 140 inches and of the larger

the universal joints compensating all spring movement and insuring against cramping stresses on the bearings or pinions. The differential gearset is the Walter automatic locking type, a worm shaft and worm wheel construction that insures against skidding or loss of traction, and affords dependable braking at all times. The service brake shoes are external contracting on the rear axle countershaft outside of the differential gearset, and the emergency brake shoes are external contracting on the drums on the rear wheels enclosing the internal gears and pinions. Large claims are made for the efficiency and economy of the Walter construction. The trucks are built in three and five-ton load capacities, with wheelbases of 162 and 168 inches respectively. A special three-ton chassis is built for equipment with pneumatic tires, which has a larger engine, the steering gear is heavier and the brakes are increased in size, while the chassis frame is lowered, the intention being to insure safety at the faster speed that these machines shall be driven.

The first display of Winther trucks made in Boston was shown by the J. W.



An Axle from an Onclida Electric Truck with Plate Removed to Show the Motor and the Patented Transmission Units.

chassis 156 inches. The 1½-ton chassis is equipped with 36 by three-inch solid tires forward and 36 by five-inch rear, with option of 35 by five-inch pneumatic cords forward and 38 by seven inches rear at extra cost; the large chassis has 36 by four-inch solid tires forward and 36 by four-inch dual rear, with option of 36 by eight-inch solid tires instead of dual at a slight additional cost.

Walter Suspended Drive Trucks.

The Walter trucks, sold through the Walter Sales Co., New York City, differ with other types in that they are driven by internal gears, the wheels being mounted on dead rear axles that are dropped between the wheel spindles, and the power is transmitted through a gearset located amidships, and a large tubular shaft to a countershaft suspended from the chassis frame directly above the dead axle. The countershaft has universal joints at either end and the ends of the shaft on which are the driving pinions that mesh with internal gears are mounted on annular ball bearings.

Claim is made that with this drive the countershaft is protected by the springs against all shocks and that the transmission of power is positive and without loss,

Emery Co., New England distributor, this including the latest production, a 1½-ton chassis, driven by internal gears by four wheels, steered by the forward wheels, designed especially for farm haulage. Winther trucks are built in 11 different models, ranging from 1½ to 7½ tons load capacity rear wheel driven, and 1½, 2½ and 3½ tons capacity four-wheel driven. The last three specified are differentiated from the others as Winther-Marvin.

Claim is made for the four-wheel driven chassis that they have unusual efficiency and they are extremely economical, because there is no loss of power. An exclusive quality of these trucks is the automatic differential located amidships. The function of this unit is to insure traction of all four wheels when driven straight ahead, and when the forward wheels are turned, as in steering, the automatic differential is uncoupled and the wheels revolve free until the vehicle is moving straight ahead, when they are coupled. This automatic release and engagement of the driving system insures ease of steering and a freedom of control that is not found in any other chassis, the manufacturer maintains.

In addition to this the company displays a series of Arcadia trailers, for which it is agent. These are built in two and four-wheel types of trailers, semi-trailers and special units for pole and lumber haulage.

While many chassis are shown, the completed trucks are especially interesting from the diversity of body equipment, which are closely examined by the majority of owners and drivers. There are unusually fine example of standard types and special designs that evidence careful development by the specialists. While trucks are built for constant and hard usage, some of the owners realize the value of display and a considerable number of the bodies are admirably finished and decorated. Several of them are for the service of municipal institutions and for concerns that can benefit by the knowledge of the people that is obtainable by the movement of sightly machines in constant use.

Majority of Trucks Shown Are Light.

The majority of the trucks shown are light types, that is, up to 2½ tons load capacity, many of which are equipped with pneumatic tires and are intended for fast driving. There is evidently a growing belief on the part of truck manufacturers that the pneumatic tires absorb the shocks and protect the mechanism of the machines against vibratory stresses, and that this economy more than compensates for the additional cost of this form of tire equipment. When the trucks exceed 2½ tons capacity, however, there is no agreement that the tires are as practical as they are believed for the smaller sizes.

But the demand is unquestionably for the smaller units, if the designs of the manufacturers and the demands of the dealers are to be believed, and the ratio of production of large units is smaller than in any previous year.

Bodies, Trailers and Construction Units.

The exhibits of bodies are comparatively few, but the displays are unusually good for the types are greater in number than ever before and most of the builders are turning out designs that meet the requirements of a much wider range of owners. The workmanship has improved as well, and the object is to produce what can be finished to satisfy the individual ideas of the purchasers. The stock bodies as a rule are constructed to dimensions that are suited to what are regarded as standard sizes of chassis.

The number of trailers are also limited, these including the Fruehauf, the Troy and the Arcadia, all of which are well known builders and produce units that are adaptable for practically all haulage purposes.

The exhibitors of truck construction units and equipment include displays of Buda engines, Continental engines, Clark internal gear axles, Borg & Beck clutches, Cotta transmission gearsets, Smith wheels, Sewell cushion wheels and Mead-Morrison winches, and the Fairbanks Co., show a diversity of service station equipment. The exhibitors of bodies are the Babcock Sales Co., the Martin-Parry Corporation and the Springfield Commercial Body Co. of Cam-

bridge, Mass. The exhibits of accessories and equipment for trucks are not numerous, but the products are such as are especially desirable.

Exhibits of Tractors Increase.

Incidentally the showing of farm tractors is larger than in former years, these including the Fordson by the Ford Motor Co., the Cletrac by A. H. Sowers, the New England agent, and the Traylor combination tractor-cultivator by the Traylor Engineering & Manufacturing Co. Besides these the Beeman, Do-It-All, Merry Garden, New Britain, Tillermobile and Utilitor tractor, which are usually operated by the worker walking, are shown. The Beeman tractor is exhibited by A. H. Sowers, the Do-It-All, Merry Garden and the Tillermobile tractors by the Eastern Motor Sales Co.; the Utilitor by the Campbell Motors Corporation and the New Britain by the New Britain Machine Co., New Britain, Conn.

There is much interest manifested in these small machines. The Do-It-All tractor is the largest of them, it having capacity to haul a single 10-inch plow, and the New Britain No. 2 is next in size. The others are of approximately equal capacity, being suited to a single seven-inch plow and similar implements. The Campbell Motors Corporation exhibit is exploited by a comely young woman garbed in a typical driver's suit. According to the exhibitors they will be extremely busy with practical demonstrations for a considerable period.

GARFORD EXPORT DEPARTMENT IN NEW YORK.

According to President E. A. Williams, Jr., of the Garford Motor Truck Co., Lima, O., the export department of that concern will be removed to 41 Park row in New York City on April 1. This removal is to be made to facilitate the transaction of foreign business, which has developed very largely since the end of the German war. Statement is made that as several thousand Garford trucks are shipped from New York annually, the location of the export department in that city will insure closer touch with foreign distributors and even better service to buyers. The office will be in charge of Earl F. Sayers, who continues as director of exports for the company.

CHAMBER OF COMMERCE HAS NEW DEPARTMENTS.

The United States Chamber of Commerce announces the organization of an insurance department with M. B. Trezevant as manager. This is one of a half dozen new departments which the chamber is establishing to provide special facilities for dealing with subjects in important fields of American business. The department will study its problem from the point of view of the business men who use insurance, taking up all phases of American insurance.

The chamber recently named Chauncey D. Snow, former commercial attache at Paris, as head of its Department of Foreign Trade.

FOREIGN TRADE SECRETARY.

George F. Bauer, who recently wrote a valuable treatise on European trade restrictions, has been engaged as secretary of the Foreign Trade Department of the National Automobile Chamber of Commerce, and will endeavor to keep that department in step with the increased exports of American motor cars and trucks, of which more than \$100,000,000 worth went to 80 different countries in 1919. The new appointee has been commercial agent on the staff of the New York office of the Bureau of Foreign and Domestic Commerce, with tariff and foreign statistics as his specialty.

Mr. Bauer will work with the Foreign Trade Committee of the Chamber, which consists of J. Walter Drake, Hupp, chairman; Peter S. Steenstrup, General Motors; H. M. Robins, Dodge Brothers; Jay Rathbun, White; R. T. Williams, Willys-Overland; J. P. Rober, Studebaker; H. B. Phipps, Hudson.

M. A. M. A. MEMBERSHIP DRIVE.

Team work in thought and action is being advocated by the Motor and Accessory Manufacturers' Association in a campaign which it has launched in an effort to enlist in its ranks every forward looking manufacturer in the industry. A larger membership means greater power and bigger results and the 300 representative manufacturers now within the fold are bending all efforts to bring into line every company eligible to the organization. The scope of the association is being rapidly enlarged and its services and advantages are multiplying in such volume that the support of every unit in the industry is needed to carry on the good work.

BANQUET AT CLEVELAND.

The Cleveland Automobile Manufacturers' and Dealers' Association scored big with its annual meeting and banquet in the Hollenden hotel ball room March 9, over 300 men attending. Salesmen and department managers of the concerns represented and leading tire men and accessory dealers of Cleveland were present by invitation. G. G. Peckham, F. E. Stuyvesant, H. C. Secrest and T. H. Towell were re-elected directors. Two orchestras, coupled with speeches, boxing matches and vocal selections, assisted in making the event enjoyable.

TO REPRESENT N. A. C. C. ABROAD.

S. A. Miles sailed on March 22 on the Mauretania to make a first hand study of automobile and general foreign trade conditions in England, France and Italy for the National Automobile Chamber of Commerce. In France he will push the request of American manufacturers for a reduction from 45 to 30 per cent. in American import duties on automobiles and urge further co-operation in standardization and shows.

BOSTON TRUCK SHOW EXHIBITORS

Make	Exhibitor	Address
Acason.....	Merchants Motors, Inc.....	460 Albany St.
Acme.....	Eugene F. Lally & Sons Co.....	*93-4 Massachusetts Ave.
All-American..	All-American Truck Co.....	Chicago, Ill.
Atlas.....	Holland System, Inc., Trading Corp.	949 Commonwealth Ave.
Autocar.....	Autocar Sales & Service Co.....	642 Beacon St.
Bethlehem....	Bethlehem Motors Corp.....	Allentown, Pa.
Briscoe.....	New England Velie Co.....	80 Brookline Ave.
Brockway.....	Brockway Motor Truck Co.....	Cortland, N. Y.
Capitol.....	Capitol Motors Corp.....	Fall River, Mass.
Chevrolet....	Chevrolet Motor Co. of N. E.....	27 Huntington Ave.
Clydesdale....	Holland System, Inc., Trading Corp..	949 Commonwealth Ave.
Columbia.....	Will-Hall-Sutherland Motors, Inc....	388 Newbury St.
Commerce....	John L. Judd.....	685 Beacon St.
Concord.....	Abbott & Downing.....	Concord, N. H.
C-T.....	Eastern Electric Vehicle Co.....	179 West First St.
Cunningham..	James Cunningham Son & Co.....	1117 Commonwealth Ave.
Day-Elder....	Schuh Motors Co.....	4 St. Botolph St.
Denby.....	Woodbridge Co., Inc.....	92 Massachusetts Ave.
Dodge.....	Henshaw Motor Co.....	989-97 Comm'wealth Ave.
Duplex.....	Lampee & Hitchcock Co.....	33 Brookline Ave.
Federal.....	Boston Federal Truck Co.....	*233 Massachusetts Ave.
Ford.....	Ford Motor Co.....	*400 Brookline St.
Garford.....	Garford Motor Truck Co., Inc.....	900 Commonwealth Ave.
GMC.....	Noyes-Buick Co.....	17 Lawton St.
Huffman.....	Hosmer-Haid Co., Inc.....	757 Boylston St.
Indiana.....	Indiana Boston Truck Corp.....	*182 Massachusetts Ave.
International..	International Harvester Co.....	†43 Somerville Ave.
Jackson.....	Harris Motors Co., Inc.....	18-22 Brighton Ave.
Jumbo.....	Peter L. Thompson.....	176 Brookline Ave.
Kelly-Spring'd.	Kelly-Springfield Truck Co.....	596 Commonwealth Ave.
Kissel.....	Spencer-Reed Co., Inc.....	1265 Boylston St.
Maccar.....	Britton Stevens Motor Co.....	†60 Binney St.
Mack.....	Mack Motor Truck Co.....	*185 Massachusetts Ave.
Master.....	Master Trucks, Inc.....	Chicago, Ill.
Maxwell.....	C. E. Fay-Allen Co.....	620 Commonwealth Ave.
Nash.....	C. P. Rockwell, Inc.....	640 Commonwealth Ave.
Netco.....	New England Truck Co.....	Fitchburg, Mass.
Northway.....	Northway Motors Corp.....	1 Beacon St.
Oldsmobile....	Boston Oldsmobile Co.....	940 Commonwealth Ave.
Oneida.....	Day Baker Co., Inc.....	110 Arlington St.
Packard.....	Packard Motor Car Co. of Boston....	1089 Commonwealth Ave.
Paige.....	Paige-Detroit Co. of N. E.....	532 Commonwealth Ave.
Phenix.....	George W. McBride & Co.....	6 Columbus Ave.
Pierce-Arrow..	J. W. Maguire Co.....	745 Boylston St.
R & L.....	N. Rommelfanger.....	398 Newbury St.
Reo.....	Linscott Motor Co.....	566 Commonwealth Ave.
Republic.....	Lebon-Kidd Co.....	983 Commonwealth Ave.
Reynolds.....	Reynolds Motor Truck Co.....	Mt. Clemens, Mich.
Riker.....	Locomobile Co. of America.....	700 Commonwealth Ave.
Sandow.....	Sandow Motor Truck of N. E.....	1-3 Brighton Ave.
Sanford.....	Lampee & Hitchcock Co.....	33 Brookline Ave.
Selden.....	Baker Motor Sales Co.....	*400 Massachusetts Ave.
Service.....	W. L. Russell Co.....	218 Elliot St.
Sterling.....	Sterling Motor Truck Co. of N. E.....	1031 Commonwealth Ave.
Stewart.....	Stewart Auto Corp.....	603 Newbury St.
Sullivan.....	Mitchell-Lucas Motor Co.....	591 Boylston St.
Traffic.....	Mutual Motor Sales Co.....	740 Commonwealth Ave.
Transport....	Walter-Transport Sales Co.....	26 Brighton Ave.
Traylor.....	Traylor Engineering & Mfg. Co.....	Cornwells, Pa.
Triangle.....	Eugene F. Lally & Sons Co.....	*93-94 Massachusetts Ave.
Ultimate.....	Arthur G. Johnson.....	*45 Lansdowne St.
United States.	U. S. Motor Truck Co. of N. E.....	305 Tremont Building.
Velie.....	New England Velie Co.....	80 Brookline Ave.
Vim.....	Vim Motor Truck Co. of N. E.....	1108 Commonwealth Ave.
Walter.....	Walter-Transport Sales Co.....	26 Brighton Ave.
Ward.....	E. Y. Stimpson.....	530 Commonwealth Ave.
Walker.....	Walker Vehicle Co.....	592 Commonwealth Ave.
Walker-J'nson.	Walker-Johnson Sales Co.....	843 Beacon St.
White.....	White Co.....	930 Commonwealth Ave.
Wilson.....	Wilson Motor Truck Sales Co. of N. E..	27 Jersey St.
Winther.....	J. W. Emery Co.....	261 Franklin St.

*Cambridge. †Somerville. ‡East Cambridge.

GENERAL MOTORS ACCEPTANCE EXPANSION.

Notes covering sales of power vehicles built by the General Motors Corporation are now being bought by the General Motors Acceptance Corporation at the rate of \$80,000,000 a year, and to afford full service facilities the corporation has opened branch offices in Los Angeles, Cal., and Dallas, Tex., and a third will shortly be established at Atlanta, Ga.

The Los Angeles branch at 124 West Fourth street covers California south of Santa Barbara and the states of New Mexico and Arizona. It is directed by C. R. Warren, manager of the San Francisco branch. The Dallas branch is at 1403 Main street and is under the direction of Manager R. F. Wingard of the Chicago branch, with T. S. Avery in charge of service and H. J. Jacobson in charge of credits and collections.

The company, which offers a financial service to dealers in and users of General Motors power vehicles, operates an extensive branch system from its executive offices in New York City, and in addition to those specified has branches at Detroit and Toronto, Ont.

NEW KISSEL SHOW ROOM.

The Kissel Motor Car Co. of Hartford, Wis., is to have a palatial show room for the display of a complete line of its passenger cars and trucks, parts, etc., for the benefit of dealers, distributors and other visitors to its plant. This will be brought about by rebuilding the west end of its two-story main factory building into a new administration building. The space to be devoted to show room purposes was formerly used by the upholstering shop, but during the war quartered army officers on duty at the plant and provided extra office space.

MICHELIN PATENT RIGHTS.

The Budd Wheel Corporation, Philadelphia, has secured the American rights to the Michelin steel disc wheels and it is announced that the patent rights to this wheel will be upheld in America. It is stated that the Rolls-Royce Co. has placed an important contract for this type of wheel. Sixty per cent. of the French passenger cars produced this year will be similarly equipped. Arrangements are being made to manufacture the wheel in England for the British market.

CLARK AND THE CONSTITUTION.

The Clark Equipment Co., Buchanan, Mich., maker of Celfor drills and reamers and Clark truck axles and wheels, has done its bit in the Americanization program being carried on by the educators and civic organizations of the country through the issuance of a booklet containing a literal reproduction of the Constitution of the United States.

The booklet is superbly illustrated by W. M. Young with pen portraits of American patriots and sketches of the plant of the Clark Equipment Co.

PLANT OPERATION DEPENDS UPON USES MADE OF TRUCK EQUIPMENT



Fleet of Three Packard Trucks Operated by the Manville Co., Used for General Haulage Purposes for Five Mills.

THREE Packard trucks have saved shut downs at the five mills of the Manville company in Rhode Island, the Social, Nourse and Globe plants at Woonsocket, the Manville mill at Manville and the Bernon mills at Georgiaville.

Assistant Superintendent William A. Robinson made known this fact in response to a query as to the cost per mile of the company's three trucks. "Cost is not a factor with us," Mr. Robinson stated. "We need the trucks to keep the mills running. With them we have been able to do that. We don't waste anything in their operation, but we know that no matter what their cost we could not get along without them."

That the trucks have saved the day when other means failed is further substantiated by Transportation Foreman Jay Neil, former chief of the Woonsocket Fire Department, who prides himself that the company's truck service is run by time table and that he can locate any of his trucks almost instantly at any hour of the day.

"I am never over five minutes out of the way in getting in touch with them and because I can do that a Manville company mill was saved at least twice from being forced to shut down," said Mr. Neil.

"I was a railroad man in my younger days," he continued, "and I learned the value of a time table schedule. I also learned that the engineer and conductor run on different schedules, the engineer having a time to 'arrive' and the conductor a time to 'leave.'"

Mr. Neil has a pad and pencil on his desk and every time a truck driver comes within a reasonable distance of the transportation chief's office he runs in and puts down his name and the time. If Mr. Neil is absent he checks these up on his return and knowing just where the man is bound for figures exactly

where he ought to be. This system has been tested on bets as well as by mill officials on necessity bent.

Reaches Drivers by Wireless.

Twice the foreman has received urgent calls that vital pieces of machinery have been damaged and must be rushed to Providence for immediate repairs in order to keep a mill going. In each case Mr. Neil has phoned to a particular point and asked to have a certain truck watched for. In one instance the man on the other end of the phone replied. "She's just coming around the corner." In the other case Mr. Neil had hardly hung up when the bell rang to inform him that the sought truck was in sight. "The boss used to think my plan wasted valuable time, but no more," said Mr. Neil.

The Manville company bought its first Packard 10 years ago. Those in service now, two with five-ton capacity and a 3½-tonner, have been on the job from one to five years.

Not Laid up a Day.

"Severe as the present winter has been the trucks have never laid up a day," Foreman Neil states. Getting to Manville, which proved an impossible proposition for trolleys, horse drawn vehicles and many trucks, was simple for the Manville company layout.

The Manville trucks were among the first to break through to Providence and have only been stumped on the getting-through game to the state capital for one week during the unusual winter.

Haul a 19-Ton Load.

The big Packards took over the road to Providence what was probably the heaviest haul negotiating that route at any time. This was a 19-ton crank shaft consigned for repairs to the American and British Manufacturing Co. All three Packards were used on the down trip, the shaft being placed on a low gear. It was found that two trucks were enough for the job and only that number was used on the return trip a few days later.

Each of the five-ton trucks hauls about 18 tons of yarns, beams and other products to and from Manville daily, there being always a return load. Trips are made frequently to Danielson, Conn.; Fitchburg, Boston, Worcester and New Bedford. One of the big Packards has made the 50-mile trip to Fitchburg, with an early morning start, and got back at 3:20 the same day.

To Lowell and Back by 2 P. M.

On a rush order to Lowell for needed material Foreman Neil made the trip himself, having guaranteed to deliver the goods at the Manville plant of the company by 2 o'clock the same day. The start was made at 1:30 a. m., the foreman and driver halting only at Lowell to get a bite to eat and have the truck loaded. Mr. Neil had his watch in his hand most of the way back, but the truck drew up at the Manville mill gates at 1:58.

The trucks usually make about five



The Interior of the Garage of the Manville Co., at Woonsocket, Which Has Ample Room for Expansion of the Equipment.

round trips a day between Woonsocket and Manville, a distance of five miles each way. They haul cloth, cotton, cases of yarns, beams and other material. When cotton or other material arrives at the Woonsocket plant it is often that it would be more adaptable for the work at Manville or Georgiaville and it is rushed hither. Yarns and beams are drawn from Danielson and pickers, machinery and general freight brought from Boston, Worcester, Fitchburg and New Bedford.

The foreman takes pride in his drivers, all tried and trusted men. The one he dotes by is Wilfred Daignault, who quit the mill truck for one of Uncle Sam's when the war gong sounded. Wilfred was told that when he came back, either night or day, his truck would be waiting for him and it was.

As a member of the 307th Supply Train, 82nd Division, the Woonsocket boy drove Packard and Liberty trucks from Detroit to Newport News, Va., and Baltimore, Md., and right up to the firing line overseas.

In addition to the three Packard trucks the Manville company garage, which adjoins the Nourse mill, Clinton street, Woonsocket, also houses a Ford truck employed on small jobs between the company's mills, and four touring cars owned by mill officials.

Mr. Neil, who has been with the company 40 years, and who was for 20 years chief of the Woonsocket Fire Department, knows the comparative value of trucks and horses. "About the time the horse quits," was Mr. Neil's version, "the truck is just getting warmed up."

The company still employs three horses, two running double, to clean up the yard and do other chores, but for the work that counts the trucks are always called on.

TO RUN DETROIT BUSES SOON.

The organization of the Detroit Motorbus Co. has been completed with the election of the following officers: President and general manager, R. W. Meade; vice president, S. D. Waldson; secretary, Sherman D. Callender. The directors include H. W. Alden of the Timken-Detroit Axle Co.; W. F. Evans, president of the Standard Screw Products Co.; Major Edwin Denby and other prominent men. One line will be established as soon as the equipment can be secured and others added as rapidly as possible. No promotion stock has been issued and none will be sold at par.

SERVICE TRUCK RECORD TRIP.

Driving a model 76 3½-ton Service truck, heavily loaded, Dick Arnold, driver for J. A. Kern & Son Co., Frankfort, Ind., recently made a record trip to and from Cleveland, O. He left Frankfort at 5 Tuesday morning and reached Cleveland at 7:30 Wednesday evening. He was back at Frankfort 48 hours later. He averaged a little better than 13 miles an hour and had no trouble of any kind. He used 83 gallons of gasoline and six gallons of oil on the trip.

NEW YORK CITY VOTES TO BUY 2000 MOTOR BUSES.

New York City is going into the motor bus business wholesale and has voted to appropriate \$1,140,000 to buy 200, which will be put into service in sections where the surface car lines have been abandoned. The money for the purchase of the buses will be raised at once by an issue of tax notes. Contracts and specifications for competitive bids are being prepared by Grover A. Whalen, commissioner of plant and structures.

Mr. Whalen estimates that the buses will cost \$5500 each and will have a seating capacity of 27 passengers. Although but a five-cent fare will be charged, he looks for an annual profit of \$275,000 for the city. It is hoped to have the buses in operation by May 15.

The buses will run in Richmond county between the St. George ferry and the Army Base hospital at Fox Hills, and in Staten Island along routes abandoned

GENERAL MOTORS HITS 409 AND FLURRIES MARKET.

General Motors turned the New York stock market topsy turvey on March 22 and its sensational rise to 409, the highest point it had ever reached, and its startling drop to 363, is reported to have resulted in a hurried calling of the Securities Committee of the exchange, which ruled that on and after that date 10 shares of General Motors, temporary certificates, no par value, should be a delivery for one share General Motors common stock, \$100 par value. This move was generally regarded as having been taken in the belief that an attempt was being made to corner the old stock.

When General Motors reached 409 shortly after the opening on March 22 an advance of 183½ points was recorded from the year's low of 225½, touched in February, and a gain of 2½ points over the previous high, reached last November. As the original common stock was



One of the Manville Co.'s Five-Ton Packard Truck with a Typical Load. Comparatively Little Long Distance Haulage Is Done.

by the Midland Railway Co. Other routes will also be laid out.

Commissioner Whalen announces that the purchase of the buses is one of the greatest forward steps ever taken by the city. It is expected to revolutionize the city's traffic problems and to build up sparsely occupied territory.

THE SERVICE MAGAZINE.

The March issue of Service, a monthly magazine, issued by the Service Motor Truck Co., Wabash, Ind., has a timely article on the Townsend National Highway act and other attractive features, including a poem and zippy comment by "Punkin, the Offs Boy."

The Peerless Truck & Motor Corporation, Cleveland, has declared a quarterly dividend of 1½ per cent. and an extra dividend of a half of one per cent., both payable April 1 to stockholders of record of March 1.

split up five for one in 1916, the new high price is equivalent to 2045 for the original stock. In 1916 the stock could be bought as low as 120.

The market value of the 1,480,152 shares of General Motors common at 409 would be \$605,382,168, against a market valuation of \$523,551,575 for the 5,083,025 common shares of United States steel at 103, its price March 22.

RETAIL STORES AND THE TRUCK.

Motor truck problems as encountered in the department store industry formed the subject of three addresses at the fourth annual conference of the International Retail Delivery Association, held at Cleveland early this month. Economy and service were the features brought out most potently in these papers, which were heard by representatives of 108 leading department stores of the United States and Canada. The 1921 meeting will be held in Pittsburgh, beginning March 15.

LAW EXEMPTS, RULING TAXES TRAILERS

SOME 93 manufacturers of trailers, 25 concerns turning out road tractors, all persons engaged in the automotive industry and dealers and users of tractors and trailers are greatly concerned by the latest decision of the Commissioner of Internal Revenue by which his rulings of last year, freeing from taxation tractors and trailers forming a semi-trailer combination, is completely reversed.

The Revenue Act of 1918 clearly and definitely exempts tractors from taxation and indirectly exempts trailers and semi-trailers by failing to mention them in any way.

Yet Commissioner Roper has promulgated a rule that they shall be liable to a tax for three per cent. or five per cent., according to the manner in which they are used or intended to be used. This decision adds another farcical chapter to the method of interpreting this act, rulings and reversals following each other to the complete confounding and detriment of this important industry.

While the subject has been handled in a most farcical way by the revenue department, it is no laughing matter to manufacturers who have their money invested or to dealers who look to the sale of these vehicles for a livelihood.

Should the latest decision, promulgated and approved March 3, be made retroactive, a hardship would be imposed on manufacturers, who are now unable to collect a tax from last year's purchasers.

It would be an impossibility for some manufacturers to pay a retroactive tax at this date. Had they collected such a tax in connection with the sale they would have been liable to a fine of \$1000 or imprisonment of one year, or both.

The new ruling is as involved as usual and only a Philadelphia lawyer can decipher its ambiguous wording. It is clear, however, that the revenue department means to impose a tax on tractors and semi-trailers, it being three per cent. under some circumstances and five per cent. in others. It is these "circumstances" that cause the manufacturers to vigorously protest.

The regulations issued in 1919 specifically exempt tractors, even if sold in combination with a trailer. They also rule that automobile trailers, regardless of the number of wheels they may have, are not parts of or accessories for automobiles.

Now the department takes a back handspring and holds that a tractor is a machine designed to "draw or pull," but that "tractors or semi-tractors which carry a portion of the load are taxable as automobile trucks;" that "trailers are not taxable," but that "so called trailers or semi-trailers so designed that a portion of the load or weight thereof is carried or borne by the tractor or semi-tractor are taxable as parts of automobile trucks."

The new decision also states that "an automobile truck or automobile wagon

formed by joining together a so-called tractor or semi-tractor * * * and a so-called trailer or semi-trailer is taxable as a whole as an automobile truck," that is, at the rate of three per cent., but when the two are "sold separately, the so-called tractor or semi-tractor is taxable as an automobile truck or automobile wagon (three per cent.) and the so-called trailer or semi-trailer as a part" (five per cent.).

How a machine can be a tractor and tax free when it draws a four-wheel trailer and an automobile truck and taxable at three per cent. when it draws a semi-trailer, and how a semi-trailer can be an automobile truck when sold with a tractor and taxable at three per cent. and an automobile part when sold separately and taxable at five per cent. is simple when you understand it, which is never.

The latest decision is in complete harmony with the original ruling of the department that a truck chassis, everywhere sold as a unit, was a part and taxable at five per cent. instead of three per cent., which wierd decree was, of course, reversed.

Manufacturers, dealers, owners and everybody interested in the automotive industry should first wage war against any possibility of the tax on tractors and semi-trailers being retroactive. When this just cause is won the fight should be started to force the United States to obey its own law, which specifically exempts tractors and fails to impose a tax on trailers or semi-trailers.

NEW DISTRIBUTORS AND DEALERS

NEW ONEIDA DISTRIBUTOR.

The Oneida Motor Truck Co. of Green Bay, Wis., announces the formation of the Oneida Philadelphia Motor Co., Inc., to distribute its product in Philadelphia. The company claims to be the only American manufacturer of both gasoline and electric haulage equipment. Show rooms will be at 2011 Market street and service station at 2010 Cutchert street, but both in the same building. "Racing Joe" Dawson is president and general manager of the new company, with David Kramer as secretary and treasurer.

TO HANDLE BETHLEHEM TRUCK.

The Baltimore Motor Co., Inc., has opened quarters at 23 West Mount Royal avenue, Baltimore, and will handle the Bethlehem truck and the Jackson Six car, both newcomers in that market.

NEW HYATT MANAGER.

The Hyatt Roller Bearing Co. has named Horace A. Brown, Jr., an employee of 19 years standing, as manager of the motor bearing division, located at Detroit.

NEW STANDARD AGENT.

The Standard Motor Truck Co. has appointed the Reliance Automobile and Supply Co. distributor of its trucks in Jackson, Mich., and surrounding territory. The trucks will be driven overland from the factory to its new distributing house, which has already found a strong demand for the Standard machine.

NEW DUPLEX TRUCK DISTRIBUTORS.

Distributor contracts have been made by the Duplex Truck Co., Lansing, Mich., with the Lawrence Motor Sales Corporation, for New York City and vicinity, and with Lempee & Hitchcock, Inc., 33 Brookline avenue, Boston, for Boston territory.

CHICAGO STANDARD TRUCK DISTRIBUTOR.

The Standard Truck Sales Co., Chicago, has made contract with the Standard Motor Truck Co., Detroit, for the distribution of Standard trucks in Chicago territory. Associated with this company as dealers are H. W. Hoppe and W. J. Dietrich.

NEW NAPOLEON DEALERS.

The Napoleon Motors Co. of Traverse City, Mich., through C. D. Peet, sales manager, announces the appointment of the following dealers: Hanson & Tyler, Omaha, Neb.; Queen City Auto Co., Philadelphia, and Frank G. Saunders, 154 Nassau street, New York, covering the Atlantic and New England states territory.

STANDARD TRUCK DISTRIBUTOR FOR COLORADO.

The Standard Motor Truck Co., Detroit, has made a distributor contract with the Standard Motor Sales Co., Inc., of Denver, Col., for the sale of Standard trucks in Colorado. This company was organized with W. S. C. Smith president and A. J. Patterson vice president, and it has contracted for \$750,000 worth of Standard chassis for delivery in 1920.

NAPOLEON COAST AGENT.

The Napoleon Motors Co. of Traverse City, Mich., through Sales Manager C. D. Peet, has engaged Fred A. Bennett of Los Angeles to represent the company on the Pacific coast.

LIVE FACTS OF THE TRUCK INDUSTRY

WISCONSIN PARTS CO. RE-ELECTS OFFICERS.

At the annual meeting of the Wisconsin Parts Co., Oshkosh, Wis., W. F. Rockwell, J. H. Wall, E. J. Dempsey, Louis Schriber and J. G. Morris were re-elected directors for the year to come. At a subsequent meeting of the directors W. F. Rockwell was elected president and general manager, J. H. Wall vice president, E. J. Dempsey secretary and Louis Schriber treasurer.

Claim was made in the reports of the officers that the company is now the largest independent exclusive builder of power truck rear axles; that the list prices of trucks built with Wisconsin axles average higher than the list prices of trucks built with other standard makes of axles, this difference in price being recognition of the superior quality of Wisconsin products by truck designers and builders. Wisconsin axles are now used in the construction of 52 different sizes of trucks by 18 manufacturing concerns.

K-W IGNITION COMPANY WINS SUIT OVER COIL PATENTS.

Federal Judge Albert B. Anderson, sitting at Indianapolis, Ind., decided in favor of the K-W Ignition Co. of Cleveland, O., in its patent infringement suit against the Ford Motor Co. of Detroit, Mich. The court sustained the validity of the patent covering the well known K-W spark coil and held that the Ford Motor Co. had infringed said patent and fixed the appeal bond of the Ford Co. at \$1,000,000. The court awarded the K-W Ignition Co. an accounting of the profits and damage arising from such infringement.

This patent was also upheld a short time ago in a suit against the Kokomo Electric Co., which was alleged to have infringed the patent by making and selling these coil units to Henry Ford & Son.

MORE SPARTON PRODUCTS.

The Sparks-Withington Co. of Jackson, Mich., has begun the construction of a four-story building to manufacture its Sparton products, orders for which call for the expansion. The new building will make available for general use that part of the present plant now given over to storage. The company's factory known as Unit No. 2 will also be improved. A second story, 50 by 320 feet, is in course of erection.

TAX-FREE TRUCK BODIES.

Because of numerous requests to the National Automobile Dealers' Association for information as to how a dealer may obtain a body, tax free, when it is to be added to a truck chassis, the association has had the certificate printed on a sample invoice, which will be forwarded on request.

Truck-Mounted Set For Casing-Head Gas Testing

Gasoline in sufficient volume to justify its recovery is often obtainable from natural gas, and determination of the commercial value of the gasoline content of gas is only obtainable by tests made at the wells. The apparatus for such tests is heavy and all tests were made by portable equipment that was expensive to operate and required time to set up and remove until the idea of mounting it on power trucks was made an actuality.

The Frick-Reid Supply Co., Tulsa, Okla., designed a testing apparatus, mounted on a two-ton Federal truck, that has been found to have qualities claimed to be superior to any other type built. The machine weighs about 4000 pounds and cost approximately \$3500. To make tests the testing outfit must be taken within a radius of 30 feet of a well, a requirement that may appear almost impossible, but the Frick-Reid apparatus has been found practicable wherever use has been attempted.

For testing the truck is backed close to the well and the machine coupled to it, and from six to 12 minutes is necessary to reach a determination as compared with hours or even days for the same work with other apparatus.

In the process the gas is taken through an inverted Tobey meter into a scrubber tank; thence to the low stage side of a compressor discharging into 130 feet of $\frac{3}{4}$ -inch pipe coil to the low stage accumulator tank; thence through 260 feet of high stage coil, discharging into a high stage accumulator. The compressor is a Blaisdell two-stage type having a capacity of 24 cubic feet of gas a minute at 250 to 300 pounds pressure on the high stage side.

The coils are so constructed that either or both can be removed, being

connected on the admission and discharge ends by headers, with high-pressure ammonia valves, so that the tester can use whatever degree of cooling is necessary to obtain the best results. The machine is equipped with thermometers located in the suction and discharge lines of both stages to determine the characteristic temperatures of the gas. The compressor is cooled by a small centrifugal pump with water taken from and returned to the coil tank, and the machine is driven by the truck engine through a power take-off mounted on the transmission gearset.

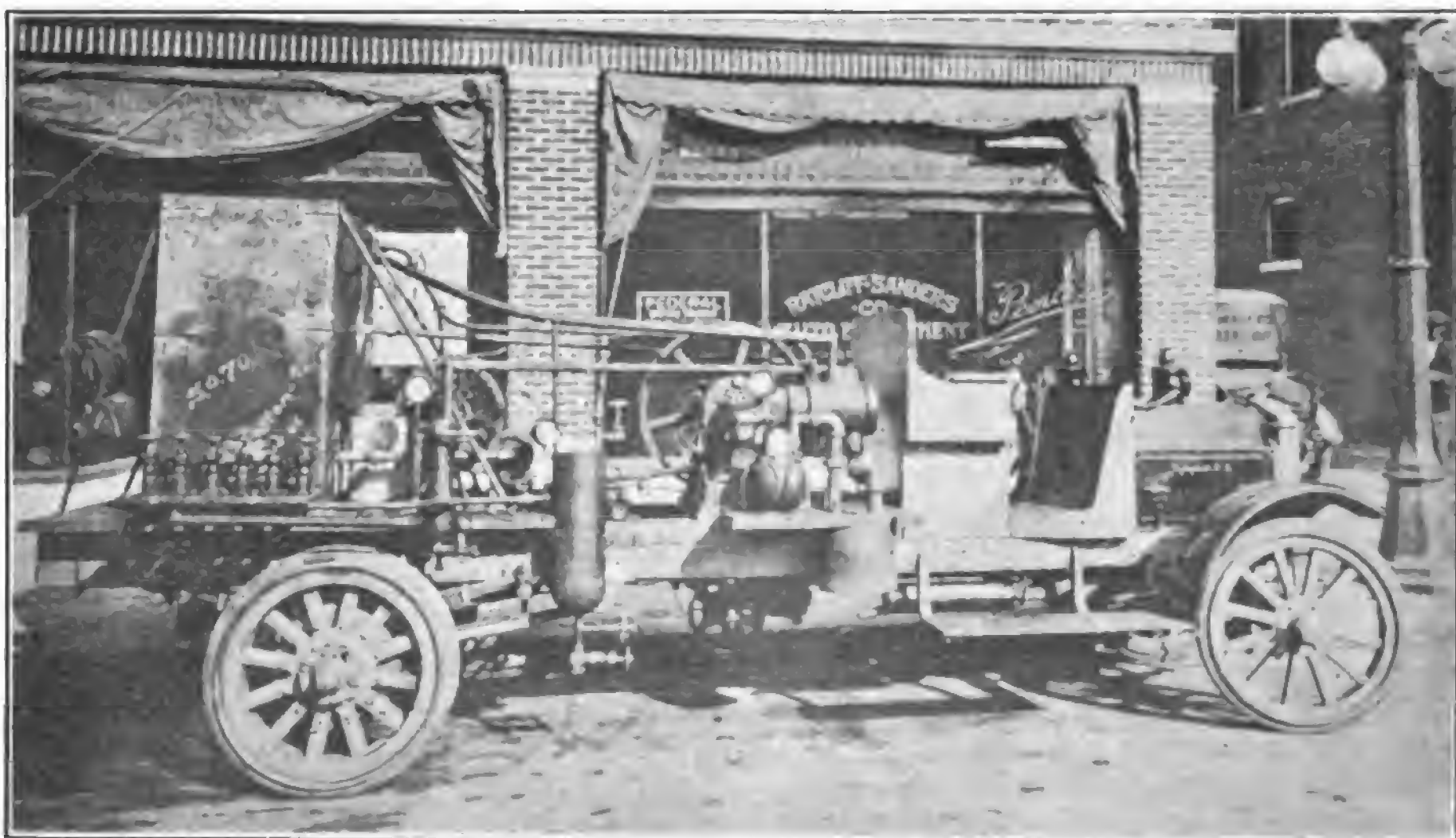
HARTFORD GETS FACTORY.

The New Haven Sherardizing Co., New Haven, Conn., is removing to Hartford, that state, where a larger plant will provide better shipping facilities and other advantages. Hartford capital is a big factor with the concern. The officers are: President, Edwin Y. Judd; vice president, Judson H. Root; treasurer, Wesley I. D. Charter; secretary, John F. Forward. All officers reside in Hartford.

The company was formed in 1910, its business being conducted under English patent rights. It engages in the process of drying galvanizing metal parts to prevent rust. It designs and installs small plants for manufacturers for treating their own products and specializes in mandrels for the manufacture of automobile inner tubes and is doing business with over 200 tire companies in the United States and Canada.

TO BOOM SEMI-TRAILER.

The Lapeer Semi-Trailer Co. at Detroit has changed hands, although the new owner, generally believed to be General Motors, has not been announced. The sum of \$200,000 will be put into the concern at once to care for the business in hand. A similar sum is to be expended in the near future for additional buildings and plant equipment.



The Apparatus Mounted on a Federal Truck Designed by the Frick-Reid Supply Co., Tulsa, Okla., for Testing Natural Gas for Gasoline Content at Casing Heads.

TEXTILE MILLS CONTRACT TRUCKING FASTER AND CHEAPER THAN RAILROAD



White Five-Ton Truck and Troy Trailer of Hamlet Co., with 10-Ton Freight Leaving New York City. This and Similar Equipment Is Constantly Used for Interstate Freightage.

BRIDGING any gap, no matter how large, between the shipper and the consignee, the Hamlet Trucking Co., Woonsocket, R. I., with a fleet of 10 trucks, has been a powerful factor in keeping industry ahumming in Northern Rhode Island since the New Haven railroad dodged the transportation issue. Mills needing raw material, fuel and other wheel turning adjuncts, have found that the railroad is a back number and that 1920 is the day of the truck.

Distance lends enchantment to the Hamlet Trucking Co., which had its big motor haulers chasing each other to Philadelphia and back during war days and nights.

Within a week Representative John F. Letendre, a member of the judiciary committee and one of the best known members of the Rhode Island Legislature, who conducts the big Woonsocket trucking concern, signed a contract to take a freight carload, aggregating 20 or 30 tons, weekly to Syracuse, N. Y., with return load.

Three days and two nights are counted on for this round trip, driving 18 hours a day. The route has not been outlined as yet, a trial trip to be made before a definite schedule is decided on. A return load has been guaranteed for every trip.

A 30-Foot Tractor Body.

For this purpose Manager Letendre will use a White five-ton truck, with 30-foot tractor body. This body is one of the longest in New England, possibly the longest in Rhode Island. With this body the truck has carried 20 tons on one trip, and on another hauled 12 tons of wool tops and a disabled five-ton loaded truck from South Barre, Mass., to Woonsocket. On the Syracuse trips one or more of the three Troy trailers owned by the company will be used. These trailers have carried five tons repeatedly.

While the world war was on three Hamlet trucks were on the road to or

from Philadelphia almost continually. In an accompanying picture is shown a five-ton White and Troy trailer ready to start on what was a record trip to Philadelphia and return. With Driver John Desplaines shown at the wheel and George St. Germaine, relief driver, this truck and trailer went to Philadelphia and back in 96 hours, the only stops being for meals and for a return load at New York.

R. I. to Philly and Back, 96 Hours.

On this memorable trip the truck and trailer hauled nine tons of wool tops to Philadelphia and brought back 10 tons of raw silk from New York to the Woonsocket store house of the Allied Silks Trading Corporation.

The company has eight five-ton Whites, a five-ton GMC and a Federal 3½-tonner.

Tractor bodies predominate, but platform and dump bodies are also used. Four or five of its trucks are sent to Boston every day. The return loads are the biggest, leaving Boston daily. A notable load from the Massachusetts metropolis, carried by truck and trailer, comprised 125 bags of scoured wool.

The trucks usually carry bales of wool from the lofts of Boston dealers to be carbonized in Woonsocket, the company serving a dozen or more mills in this way. The wool comes to the Rhode Island city dirty and goes away clean. Because of the active wool market the Hamlet trucks have carried the same load of wool to and from Boston several times. The same bale of wool is sometimes handled a dozen times, which takes away the wonder as to why the cost of a woolen suit of clothing is prohibitive.

In addition to making regular trips to South Barre, Mass., after wool tops, the company trucks also get a great many of these tops at Worcester, to which point they are shipped by freight. Trucks distribute the tops secured at Worcester at points between Uxbridge, Mass., and Providence for the Pocasset mills of Thornton, R. I. Machinery, castings and other material are taken on the outgoing trip to Worcester.

Warns Against Vermont.

Vermont was another regular destination for the Hamlet company trucks, but Manager Letendre warns truck owners to keep away from that territory because of the law forbidding trucks aggregating 6½ tons overall from crossing the bridges of that state. Mr. Letendre is well qualified to speak on that point and here's how.

A brand new White five-ton truck went through a bridge at South Royalston, Vt., last November. The driver was killed, it cost \$500 to get the truck on terra



Garage of the Hamlet Trucking Co., Woonsocket, R. I., a Concern Exclusively in Contract Haulage, Largely for Textile Mills.

firm again and \$1500 to put it back in shape. To add insult to injury the state, which by neglecting to build bridges of strength, caused his driver's death and damaged his truck, turned around and forced the company in which the truck was insured to repair the bridge at a cost of several hundred dollars.

The truck was carrying a monument weighing $3\frac{1}{4}$ tons when the accident took place. The truck weighed slightly over four tons, the total tonnage therefore being greater than the $6\frac{1}{4}$ ton overall allowed by the Vermont law. The truck was almost across the bridge when the structure collapsed, the machine sliding backward 25 feet into four feet of water. The body came up through into the cab, crushing to death the driver, Joseph Bouchard, and severely injuring his helper.

When the truck was hauled out ready to be shipped home an attachment of \$600 was placed on the machine to cover the cost of repairing the bridge. A local citizen, who became indignant over the matter, put up a bond and the truck was allowed to proceed to Woonsocket to be made whole again.

Despite the condition of the Vermont bridges they are not posted. Most of them rattle and threaten to collapse when a passenger car crosses them and owners of heavy trucks take a chance in sending their machines into that state.

The Hamlet Trucking Co. bars express and piece jobs, delivering only loads. It handles no freight. Charges are made per load for local hauling; but the company's contracts with mills and regular customers is by weight. Many of its loads of yarn and other mill goods are valued at as much as \$5 per pound. Trucks and loads are all covered by blanket insurance.

The employees are not bonded and the firm has been able to secure a high grade of drivers. No overtime is paid but, in addition to a substantial weekly wage, the men are given a bonus of \$10 every second week. This is an insurance against carelessness of every kind and also aids in retaining good men. The bonus is not paid until a driver has been employed for a month.

The bonus also beats overtime by doing away with loafing, as the truck crews do not take an hour or two off in the woods on a long trip to gain overtime. The bonus can be held out any time and is always a safeguard against wrong doing of any kind by the employee. Bonuses are also paid to men on long trips. The men are asked to drive 15 hours a day if conditions warrant and are given a bonus equal to overtime, even more when occasion warrants.

The Hamlet Trucking Co. was organized nearly five years ago under the name of the Hamlet Avenue Garage. Two years ago the concern broadened out and assumed its present name. It has been a God send to the mill owners of the hustling manufacturing center of Northern Rhode Island and Southern Massachusetts.

Woonsocket is a pivotal point for the New Haven railroad, being in direct touch with Boston, Providence and Worcester. The handling of freight in

the northern city by the railroad has long been a target for attack by men engaged in commerce and industry. The Hamlet Trucking Co. has done yeoman work in relieving the situation and bids fair to keep on the high speed in its endeavors to serve the shipping public of that locality.

While the railroad freight situation is under discussion it might be well to touch on one of the most monumental pieces of stupidity ever perpetrated by transportation officials, this being the placing of the new railroad freight houses in a hollow, thereby taxing to the absolute limit all vehicles engaged in hauling. The placing of the yards practically in another state was bad enough, but the choosing of a site demanding all up-hill hauls was the crowning bit of bad guess work that has caused chauffeurs and drivers to use profane language without stint.

The garage of the Hamlet Trucking Co. is a neat piece of architecture on Hamlet avenue, Woonsocket. It houses all of the company's 10 trucks, but the three trailers in service are put up elsewhere.

NAVY YARD WORKERS TO RUN OWN MOTOR BUS LINE.

Forced by inadequate trolley service to take the matter of transportation into their own hands, the 8500 employees of the Philadelphia navy yard have inaugurated a movement to run a motor bus line of their own.

Each employee will be asked to make an initial subscription of \$5 per week and pay \$2 per week for maintenance until further notice. This plan gives the company immediate capital of over \$40,000 and nearly \$1,000,000 annually for maintenance. It has not been decided whether the subscribers will be provided with passes or whether fares will be collected and returned later in dividends.

The proposed line will run from the water front at the navy yard several miles north on Broad street, connecting with intersecting lines on the principal east and west streets. The city will be asked to draft proper ordinances for the operation and protection of the line.

GASOLINE QUALITY UNCHANGED.

Tests by the Bureau of Mines in a half dozen leading cities between Jan. 17 and Feb. 3 show that there has been practically no change in the gasoline and motor fuel marketed now from that offered in April of last year. The general average is almost identical with the 1919 survey. These investigations will be made hereafter in January and July of each year.

MONEY TO BUY TRUCKS.

The Massachusetts Finance Corporation, capital \$500,000, has opened offices in the Whitney building, Springfield, Mass., its purpose being to loan would-be truck owners cash to help purchase machines. Legal interest will be charged and the loans are to be reduced each month.

ASK \$1,900,000 FOR GOVERNMENT SUPPORT OF INDUSTRY.

The Material Handling Machinery Manufacturers' Association adopted resolutions at its Feb. 26-27 meeting at the Waldorf-Astoria Hotel, New York, calling on Congress to appropriate the sum of \$1,900,000 for government support of industry through the instrumentality of the Bureau of Foreign and Domestic Commerce. The motorization of the freight terminal, the resources and possibilities of Russia, Americanism and improved port and railroad handling facilities for exporters were among the topics discussed by speakers.

The following board of governors, which will elect the officers this month, was named: F. W. Hall, Sprague Electric Works, New York; H. W. Standart, Northern Engineering Works, Detroit; J. C. Walter, Alvey Ferguson Co., New York; W. F. Merrill, The Lamson Co., Boston; R. W. Scott, Otis Elevator Co., New York; D. V. Jenkins, Watson Elevator Co., New York; L. C. Brown, Ellwell Parker Electric Co., New York; R. Owens, Lakewood Engineering Co., Cleveland; F. Stadelman, Wellman, Seaver, Morgan Co., New York; T. Robins, Robins Conveying Belt Co., New York; G. O. Helmstaedter, Hyatt Roller Bearing Co., New York, and G. W. Miller, Jeffrey Manufacturing Co., Columbus, O.

LECTURES ON SERVICE.

Talks, discussions and lectures on service subjects will be given in a series extending several months by the Automotive Service Association of New York. Selling, service, claims and adjustments, battery service, accounting as an asset to service, specializing mechanics, classification and development of craftsmen, what service means to the dealer, revision of the apprentice system, charting the bookkeeper and service salesmanship will be topics discussed.

The speakers include: Henry M. Holt, Willys-Overland Co.; Ernest V. Derks, Buick Motor Co.; C. N. Rollings, F. S. Gassoway, Inc.; W. A. Evans, Packard Co.; Col. Jim Florida, Packard Co.; Ralph C. Rognon, Brockway Motor Truck Co.; J. H. Lange, Three Point Truck Co., and Henry L. Ferris, Autocar Sales & Service Co. The lectures will be held semi-monthly.

EXPORTS AND IMPORTS.

The monthly statement of the foreign trade of the United States for January show that imports more than doubled over the same month a year ago and that exports increased over \$100,000,000. The figures follow: Imports, January, 1920, \$473,904,053; January, 1919, \$212,992,644; exports, January, 1920, \$732,745,493; January, 1919, \$622,552,783.

For the seven months ending in January the total imports were \$2,767,771,494, against \$1,698,201,420 for the same seven months a year back, while the exports in the same period were \$4,596,003,732, against \$3,797,413,718.

PLANS FOR INCREASES OF OUTPUT

DETROIT STEEL PRODUCTS PRODUCTION PLAN.

At the annual meeting of the Detroit Steel Products Co., Detroit, Mich., John G. Rumney, Victor F. Dewey, Leo M. Butzel, Henry Russel, Mason P. Rumney, R. S. Drummond, H. F. Wardwell, A. L. Baldwin and Edgar R. Ailes were elected directors. The board in turn elected the following officers: President, John G. Rumney; vice president and general manager, Victor F. Dewey; assistant general manager, Mason P. Rumney; secretary, H. F. Wardwell; treasurer, Edgar R. Ailes, and production manager, A. L. Baldwin.

Reports presented stated that the prospect for 1920 was extremely satisfactory, the output of the works being sold well into the year, and there was probability of the largest volume of business in the history of the company. Completion of the addition to the spring shop, now progressing, will increase production largely in excess of that of any other manufacturer of power vehicle springs, and the company is now the largest manufacturer of steel window sash in the world.

CONNECTICUT AUTO REGISTER.

The 1920 motor vehicle register for Connecticut will be published in one book and two supplements, the book containing the 100,000 registrations up to April 15, the first supplement the 15,000 estimated from April 15 to June 15 and the second supplement the 10,000 expected to register from June 15 to Aug. 15. The book will be ready about May 1, the first supplement July 1 and the second Sept. 1. The state motor vehicle department will get out the publication, which will be attractively printed and bound, and for which a price of \$2 will be charged. It will contain much interesting information, in addition to the registration list.

FREIGHT RATES UP SEPT. 1.

When the financial provisions of the new railroad law become effective on Sept. 1 an increase in railroad freight rates from 20 to 25 per cent. is anticipated. This should bring additional revenue of \$200,000,000 yearly to the railroads. Rates are to be fixed on basis that will give a return of 5½ per cent. on the aggregate value of property devoted to the uses of transportation.

\$100,000 BRASS FOUNDRY.

The Waukesha, Wis., Brass Foundry Co. is to build a complete new shop group at a cost of about \$100,000. A tract of land, 170 by 300 feet was recently purchased. Several large automotive plants in that city furnish home consumption for the bronze and brass castings and parts which the company manufactures.

DURSTON GEAR CORPORATION ANNUAL MEETING.

The stockholders at the annual meeting of the Durston Gear Corporation, Syracuse, N. Y., held Feb. 16, elected R. M. Bean and A. C. Bryan, respectively sales manager and factory manager, directors and vice presidents. A. H. Durston was elected president, M. H. Durston first vice president and J. F. Durston secretary-treasurer.

The Durston Gear Corporation is the successor of the Lefever Arms Co., maker of high grade shot guns. In 1916 the gun department was sold to the Ithaca Gun Works and the company re-incorporated, it engaging in the manufacture of gears and transmission gearsets. The company now has contracts with some of the largest manufacturers of the industry and is operating its plant with day and night shifts, employing about 400 men. This force is shortly to be increased to 600. The company has reputation for producing very high quality. It recently begun production of a new model gearset that is claimed to embody all the best ideas in advanced engineering.

TRUCK PROBE BY CONGRESS.

A report that 70 Military trucks were purchased by the War Department in the last few months at a cost of \$8000 each is the alleged basis for the introduction of a bill in the lower house of Congress calling for an inquiry as to whether any of these trucks or tractors, or parts of them, have been purchased, and if so, how many. The bill would also investigate the number of trucks and tractors sold by the department and how many are at present available.

TO BOOST LAMBERT OUTPUT.

The Lambert Tire & Rubber Co., Barberton, O., is making plans to double production. Changes in the organization have been effected and the new lineup follows: President, H. H. Lambert; vice president and chairman of the board of directors, Judge Arthur Langwith; vice president and director, N. W. Coyle; director and general factory superintendent, Porter E. Ramsey; secretary-treasurer and temporary general manager, J. H. Hausan.

SCHRADER'S NEW PRESIDENT.

Directors of A. Schrader's Sons, Inc., have elected M. Charles Schweinert president to succeed Dr. Charles K. Cole, who died recently. The new president has been with the company 34 years, holding many important executive positions. He has developed many new designs in tire valves, in which the company specializes, his latest being a high pressure valve for service on heavy pneumatic tires designed for truck service.

TWELVE-STORY BUILDING TO HOUSE GARFORD CO.

The magnificent 12-story building which is to house the executive offices and accommodate the sales and service department of the Garford Motor Truck Co.'s eastern territory, will soon be under way. The building will be located on the Bridge Plaza at the eastern end of the Queensboro bridge, 59th street, New York. It will have a frontage of 200 feet and will contain 23,000 square feet net on each floor.

The selection of this location was largely influenced by the exceptional transportation facilities and the growing importance of the Bridge Plaza district of Long Island City, where the Garford plant will be the most conspicuous building. Over 14,000 vehicles pass this point daily, the new structure being a particular convenience for Garford patrons who use this route. The Queensboro bridge is one of the most ample spanning the East river. The new B. R. T. tunnel will run directly from the Bridge Plaza to the center of Manhattan in about 10 minutes.

NEW LYCOMING FOUNDRY.

The Lycoming Foundry and Machine Co. has under construction at Williamsport, Pa., a new foundry which will be one of the largest plants in the country devoted exclusively to the manufacture of motor castings. When the new structure is completed the present foundry will be dismantled and turned into a machine shop.

It is planned to melt 250 tons of iron daily in the new plant, which means the production of 1000 to 1200 complete sets of castings each day. A power plant will be erected with reserve capacity for extensions of the factory. Among recent contracts signed by the company was one to provide castings for the new four-cylinder car to be built by the Willys interests at Elizabeth, N. J.

"SIX DOLLAR" CRUDE OIL.

The expected reaction on gasoline prices has already set in with nominal increases here and there as a result of the last jump in crude oil, the Pennsylvania oil being quoted at \$6.10 a barrel on March 2. Crude has advanced about 50 per cent. during the year. This condition is bound to exert an influence on automobile fuels.

WICHITAUK KEEPS TALKING.

The Wichitauk, the monthly publication devoted to the interests of those who own or may later own Wichita trucks, published by the Wichita Motors Co., Wichita Falls, Tex., bears its usual nifty appearance in the March issue, and has a number of subjects that will appeal to truck owners.

INDUSTRIAL AND TRADE HAPPENINGS

RAINIER MOTOR CORPORATION TO TRIPLE PRODUCTION.

As a result of new financing the Rainier Motor Corporation is to immediately erect extensive additions to its plant at Flushing, L. I., for the manufacture of worm-drive delivery trucks to care for its rapidly mounting domestic and export business. Company plans call for a tripling of production this year.

The new capitalization provides for the issuance of 7500 shares of eight per cent. cumulative preferred stock, par value \$100, of which 7000 shares are to be issued immediately, and 30,000 shares of common stock, no par value, also to be issued at once. A syndicate, headed by John Nickerson, Jr., investment banker of New York, who has been named a director, has purchased the new preferred stock.

WORKING FORCE DOUBLED.

The Conradson Machine Tool Co., Green Bay, Wis., has doubled the working force of the new plant erected last fall and has thereby accomplished a large increase in the output of selective head turret lathes, milling machines and radial drills. The entire production has been contracted for by Joseph T. Ryerson & Sons Co., Chicago, which now has an office in Green Bay. Until the Conradson plant is enlarged sufficiently to accommodate these operations the miller is being manufactured under contract by the Green Bay Barker Co. and the drill by a concern at Marquette, Mich.

MAGNETO CONTRACTS.

The Eisemann Magneto Corporation has a new sub-station at Washington, D. C., the Auto-Electric Service Co., it being connected with the Automotive Engineering Co. of Baltimore, the official service representative of the Eisemann company. Contracts for magneto service have recently been signed with the following: Kentucky Wagon Manufacturing Co., Louisville, for the "Dixie Flyer;" The Maccar Truck Co., Scranton, Pa.; Superior Motor Truck Co., Atlanta, Ga.; Commerce Motor Truck Co., Detroit; Barber-Greene Co., manufacturers of conveying machinery, Aurora, Ill.

BIG PRICE FOR SHEET BARS.

Automobile builders want a thing when they want it, as was proven recently when two Detroit builders unable to get steel sheets of automobile quality in the open market each paid \$90 and \$92 Pittsburgh, for 3000 to 5000 tons of prompt open-hearth sheet bars, turning them over to the mills for conversion. With Bessemer sheet bars, which are not suitable for automobile specifications, selling at \$70, Pittsburgh, an unheard spread of \$20 from open-hearth steel has been created.

\$300,000 ADDITION TO PRESENT DAY-ELDER PLANT.

The Day-Elder Motors Corporation is to build a \$300,000 addition to its present plant in Irvington, N. J. The first unit was erected in 1917 at a cost of \$350,000. The new building will be utilized for assembling exclusively and will have 80,000 square feet of floor space. It will be four stories, of reinforced concrete construction. The floors and roof will be of concrete.

The new structure will not take all of the ground on a recently acquired tract of the land, leaving room for further development by the company, which now has a total of 150,000 square feet of floor space. The first unit will be used for offices, paint shop and storage, as well as assembling.

TO MAKE CYLINDER CASTINGS.

The Ryan-Bohn Foundry Co. has been formed at Lansing, Mich., and will spend \$1,000,000 for plant and equipment on a tract of 50 acres of land, where cylinder castings will be manufactured. The company is controlled by D. J. Ryan and Charles B. Bohn. The former is a member of the Allyn-Ryan Co., Cleveland, and the D. J. Ryan Co., Wyandotte, Mich. Mr. Bohn is head of the Charles B. Bohn Foundry Co. in Detroit. He had been affiliated with the Aluminum Castings Co. for years.

MALLEABLES IN DETROIT.

The American Malleables Co., Owosso, Mich., has moved its general sales office to Detroit, where P. G. Smith, vice president and sales manager, is in charge of the new quarters at 1409 Kresge building. The change was made because the many orders from this important field caused the company to feel that it should be in closer touch with its customers.

MOVING A BUNGALOW WITH A TRUCK AS TRACTOR.

When the average citizen moves his home he hires a truck or a cart or wagon and several experienced able-bodied furniture manglers to do packing and loading and unloading and setting up, and confidently expects that at least half of his property will be serviceable when he is "settled." This is because the average house is owned by others or is too weighty or bulky to be taken along with the furniture.

But seemingly the ideal removal was made a short time since by a San Diego, Cal., resident, who was dissatisfied with his location. He bought a property four miles distant and because his bungalow suited him perfectly he wanted to set this up on the new lot. Removing it appeared impossible, but H. E. Cooper, a truckman, allowed it was a practical undertaking. The building was jacked and mounted on wheels and with a big Federal truck it was hauled over the road in about six hours.

Not only was the house and furnishings intact, but the cost was exceedingly small and housekeeping was not seriously interrupted. From this it is evident that while the bungalow has its limitations as a dwelling, it also has advantages that largely compensate these.

40,000 BOSCH MAGNETOS A MONTH SOON.

The American Bosch Magneto Corporation at Springfield, Mass., expects to be turning out its maximum of 40,000 magnetos a month by the first of April. All available space will be used this spring, the concern having about doubled its output in little over a year.

The directors recently declared a quarterly dividend of \$2.50 per share on 80,000 shares and the earnings for the year are expected to total \$20 per share.



Moving a Bungalow Four Miles to a New Site at San Diego, Cal., Without Removing Contents with a Federal Truck Saves an Owner Large Expense.

MOTOR TRANSPORT COURSE AT NEW YORK UNIVERSITY.

New York University has added a course in motor transportation engineering as a part of a new course in industrial engineering, open to students in mechanical and civil engineering, particularly to those specializing in subjects relating to highway engineering. F. Van Z. Lane, chief transportation engineer of the Packard Motor Car Co., Detroit, will be in charge.

Mr. Lane states that the course will deal solely with the application of the truck as a transportation unit in industry and not with motor truck design. Pupils will be taught how to use the motor truck effectively and economically, a lesson which will not be lost, as the motor truck is an essential part of every industry.

The course is the first of its kind to be given at any university in connection with industrial study. It will include lectures on the following phases of the work: The Future of the Motor Truck, Motor Truck Operating Costs, Motor Truck Versus Horses, Motor Trucks Versus Railroads, Trailers and Semi-Trailers, Special Bodies, Loading and Unloading Devices, Scheduling, Routing and Dispatching, Maintenance and Garaging, Hiring, Training and Retaining Drivers.

Mr. Lane is a graduate of New York University and was formerly a highway engineer in both New York and Brooklyn.

FEBRUARY FOREIGN TRADE.

February exports show a slump, the total of \$646,000,000 being the smallest since October of last year, being \$76,000,000 less than the figures for January and \$61,000,000 more than the imports in February of 1919. Exports for the eight months ending in February were \$5,231,000,000, against \$4,383,000,000 in the same months last year.

February imports of \$467,000,000 were \$7,000,000 less than those of January. The imports in February, 1919, were \$235,000,000. Imports for eight months totaled \$3,235,000,000, against \$1,933,000,000 a year ago. The imports for these eight months exceeded by \$140,000,000 the imports for the entire fiscal year ending June, 1919.

CALLS FOR MORE IMMIGRATION.

The American Malleable Castings Association of Cleveland has taken a firm stand against restricting immigration, claiming that the present supply of labor must be augmented. Malleable plants are running far below capacity because of a scarcity of help. Stimulation to immigration is the only remedy, the association officials declare.

Reports show a steady decline of monthly shipments since the peak of October, 1917, when they amounted to 112 per cent. of nominal capacity. Shipments for the first nine months of 1919 were only a little over 70 per cent. of the total plant capacity.

TWO WESTINGHOUSE AMMETERS ARE PUT ON MARKET.

The Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., has placed on the market two new ammeters for automobiles, motor boats, airplanes and other automotives.

The type B I ammeter is inexpensive, although entirely accurate for the service intended. It operates without springs or moving coils, is dead beat and can stand momentary overloads of 500 amperes without damage. The dial is easily read, being two inches in diameter, and the scale an inch and a half long, indicating amperages of from 15 to 30, charge and discharge. Black dials with white needles or the reverse can be supplied. The meter is arranged for flush mounting in the dash or cowl.

The type B X ammeter was originally designed for government radio service. It is the smallest D'Arsonval instrument made. But two inches in diameter this instrument possesses the delicacy and accuracy of the standard switchboard type. It is supplied for flush as well as projection mounting. Voltmeters with scales ranging from three volts are also supplied in the B X type.

TRUCKS WOULD SAVE MILLIONS FOR UNCLE SAM.

That the government is saving money through the use of motor trucks is conclusively shown in figures furnished by the Service Motor Truck Co. Five motor trucks in the United States mail service running for the last six months of 1919 in the State of Pennsylvania, cost the government but \$14,588.14, this including all operating and administrative expenses. The receipts from their services were \$52,067.41, making a profit of \$37,479.27.

It was estimated from these figures that \$1,000,000 a year could be saved by using motor trucks in hauling potatoes to the city of Washington, and proportionate savings on other farm produce. It costs 19 cents to bring in a dozen of eggs, of which the city uses 6,800,000 dozen a year. Trucks would bring them in for two cents a dozen.

TIRE WORKERS PAY TAX.

That the automotive industries pay their employees well is indicated in the case of the Goodyear Tire & Rubber Co., 10,000 of the 26,000 men and women workers in Akron, O., being forced to pay an income tax. At a minimum these employees turned over \$100,000 to Uncle Sam. The legal department of the company assisted in making out the returns.

NEW MEXICAN OIL WELLS.

Production will greatly increase as the result of the action of the Mexican government in permitting certain petroleum companies to drill new wells. Two of these are already producing. It is understood that at least 28 permits are to be granted.

TWIN TUBE TUNNEL FROM JERSEY TO NEW YORK CERTAIN.

Few, if any, obstacles remain to be overcome in the project to build a twin-tube tunnel under the North river from Jersey City to New York, the work being in the hands of the New York and New Jersey Tunnel Commission, which has decided on an external diameter of 20 feet and a 20-foot roadway. Statements that the proposed tunnel would reach its estimated capacity of 2200 vehicles an hour in six years failed to influence the commission to shift to a three-line tunnel.

Work on the specifications is going forward so that bids will be advertised for by mid-summer and the digging begun in August. The estimated cost is \$28,669,000. The plans call for a cast iron tunnel, although a proposition has been made that it be of interlocking concrete blocks.

This tunnel will be a boon to all owners of vehicles and will mean the saving of vast amounts in the handling of merchandise.

MOTOR STAGE SOLVES ARIZONA'S TRANSPORTATION PROBLEM.

Motor stage lines are proving a God send to the people of Arizona, reaching towns and hamlets isolated a few years ago. These lines have increased with such rapidity that they are said to have doubled the passenger transportation facilities of the state. A well equipped motor stage line parallels nearly every railroad. Some of the large companies have their own machine shops and mechanics and buy tires and other equipment in wholesale lots.

All the communities are now working for good roads and companies are being formed regularly to put big passenger cars and freight trucks on the road.

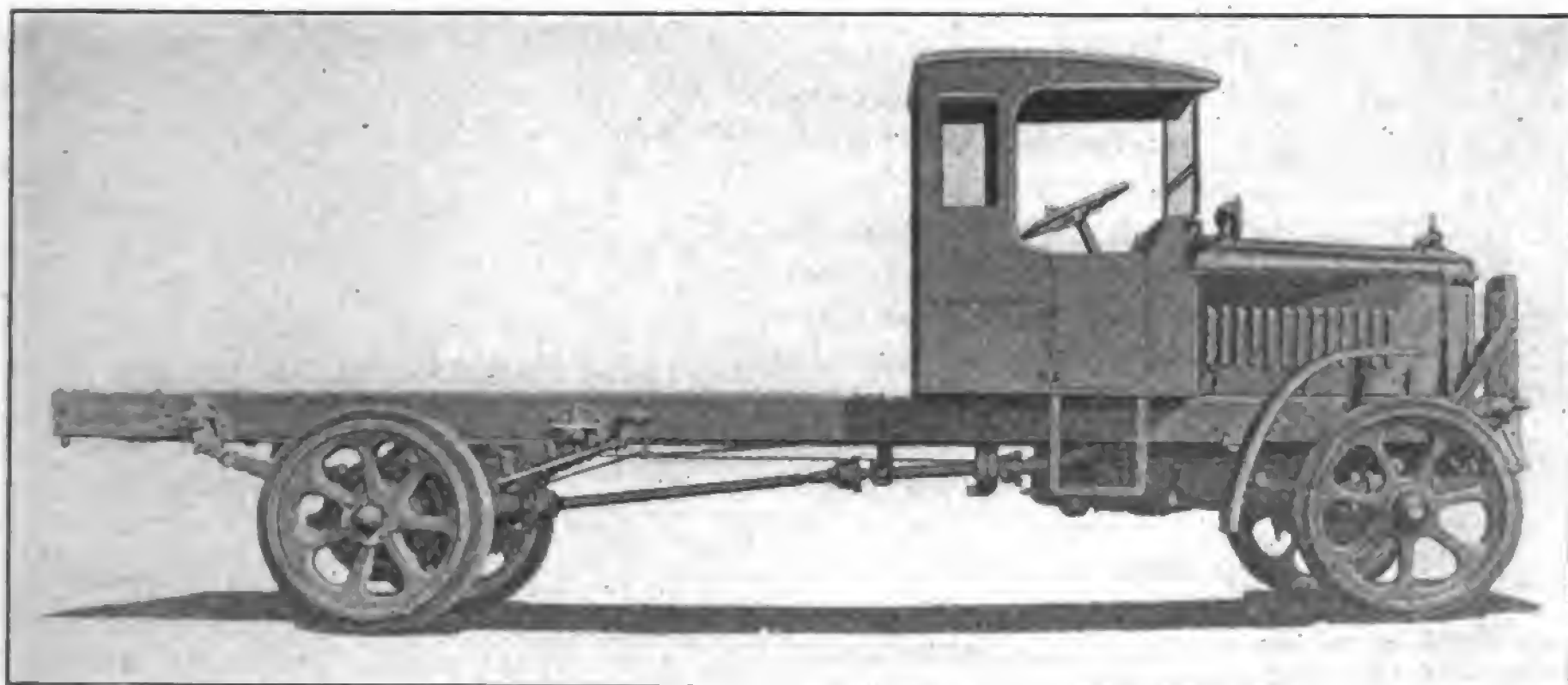
NEW USES FOR TRUCK.

Industrial truck manufacturers are finding a strong demand for special equipment. This includes a call for crane trucks and special loading machines designed for material feeding purposes in connection with other plant equipment. Truck equipment, fitted with flanged wheels, is being used to replace steam and gasoline locomotives because of the lower operating cost. Industrial trucks are being employed by factories as time and labor savers in hundreds of new and novel ways.

SELDEN'S NEW PUBLICATION.

The February and March issue of Truck Transportation, the monthly publication by the Selden Truck Corporation, Rochester, N. Y., show that this magazine, which saw the light with its February issue, is bound to be in demand by those who desire to keep in touch with what is happening in the industry. The publication is nicely put together, has an attractive appearance, is well illustrated and contains articles that teach as well as entertain.

MODEL 35 3½-TON JUMBO TRUCKS



The Model 35 Jumbo Truck Chassis, 3½ Tons Capacity, Internal Gear Driven, That Is Sold with Complete Equipment.

PRODUCTION of its model 35 Jumbo truck, which has rated load capacity of 7000 pounds, has been well advanced by the Nelson Motor Truck, Saginaw, Mich., and the machines are now being turned out practically to the general manufacturing plan. The intention is, of course, to increase this to whatever demand may require. The company maintains that the chassis of all Jumbo trucks are sold completely equipped, and that aside from the bodies nothing is necessary for service. The company will supply bodies and power hoists when these are desired, carrying in stock equipment of standard types usually utilized for general service. All Jumbo trucks are internal gear driven and the larger sizes are built to either standard or long wheelbase as specified.

Jumbo trucks are constructed of standard units, the products of specialists, that have been chosen with careful regard for service life, and these are assembled so that there will be unusual factors of safety. The units for the model 35 include Buda engines, Brown-Lipe clutches, Brown-Lipe transmission gearsets, Spicer universal joints, Clark rear axles, Standard Parts front axle, Perfection springs, Dayton steel wheels, Jacox steering gear; the engine is fitted with Zenith carburetor, Duplex governor, Eisemann high-tension magneto with impulse starter; the bearings throughout

the chassis are Timken and Hyatt roller types.

The power plant is a unit assembly, a Buda engine being combined with a multiple disc dry clutch and a four forward speed ratio transmission gearset. The engine is a Buda model YTU, a four-cylinder, water cooled, four-cycle, L-head, vertical type, having cylinder bore of 4½ inches and stroke of six inches that is rated by the S. A. E. formula at 32.40 horsepower, but which will develop power largely in excess of this rating.

Engine a Standard New Type Buda.

The engine is a four-cylinder, four-cycle, water cooled, vertical, L-head type, with the cylinders cast en bloc with the water jacket integral, the water intake being at the base of the jackets and located so that there is a free circulation of water around each cylinder and valve, and across the combustion heads. The head is separable and is retained by a series of heavy studs. The spark plug bores in the heads are entirely surrounded by water. The water outlet in the cylinder head is fitted with a removable elbow that may be placed in four different positions, so that the head can be quickly removed for cleaning and inspection.

The pistons are cast from the same material as the cylinders and these are turned to exact dimensions and channelled for three eccentric rings above the

wristpins and one wiper ring at the bottom of the skirts to insure good distribution of the oil and prevent leakage from the combustion chambers to the crankcase. The pistons are ribbed to obtain cooling and much care is taken to bore and ream the wristpin holes in exact alignment. There is a balancing pad so that each piston may be machined to a given weight and balance.

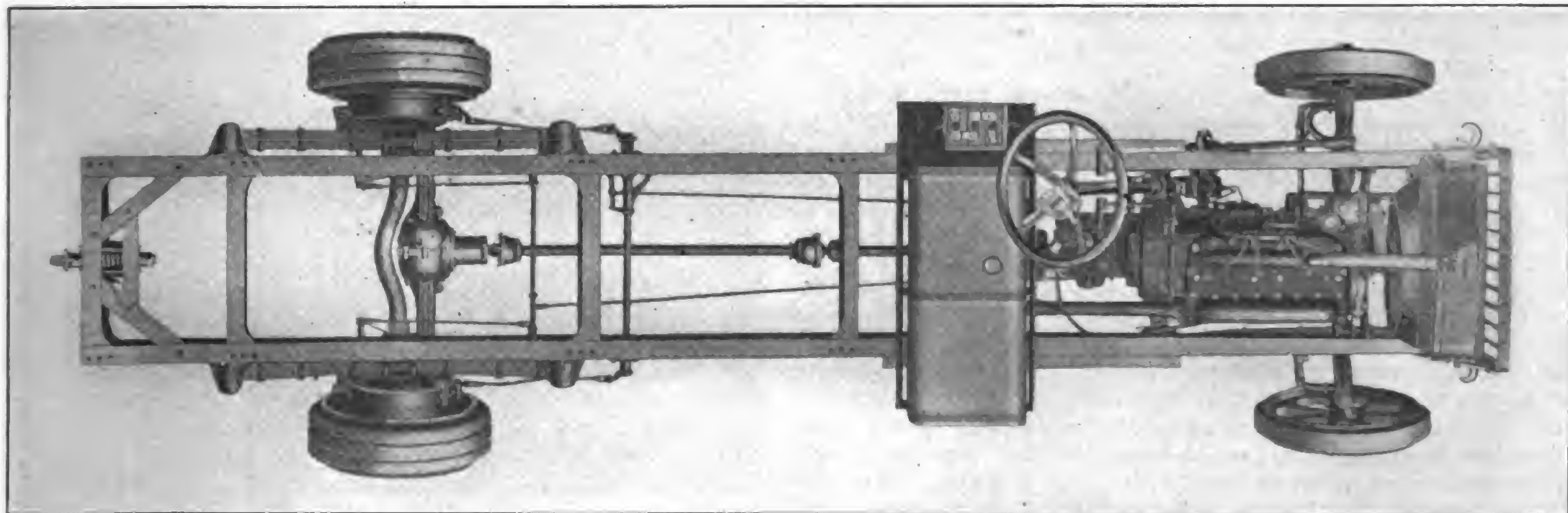
Crankcase of Conventional Design.

The crankcase is iron, cast in two sections, the upper half being divided vertically by a transverse web that carries the center main bearing, and there are forward and rear extensions which house the timing gearset and form the upper portion of the bell housing for the flywheel. The lower half of the flywheel housing is a separate casting. The lower section of the crankcase is fitted with a removable horizontal plate that is the base of the crank chamber and the top of the oil reservoir, and there is a removable plate that forms the seat for the oil pump, which can be taken off for inspecting the pump or cleaning the pump intake. There is a plug for draining the reservoir from a well in which sediment and water may accumulate. The oil reservoir may be taken off independent of the flywheel housing. The timing gearset is enclosed by a cover plate.

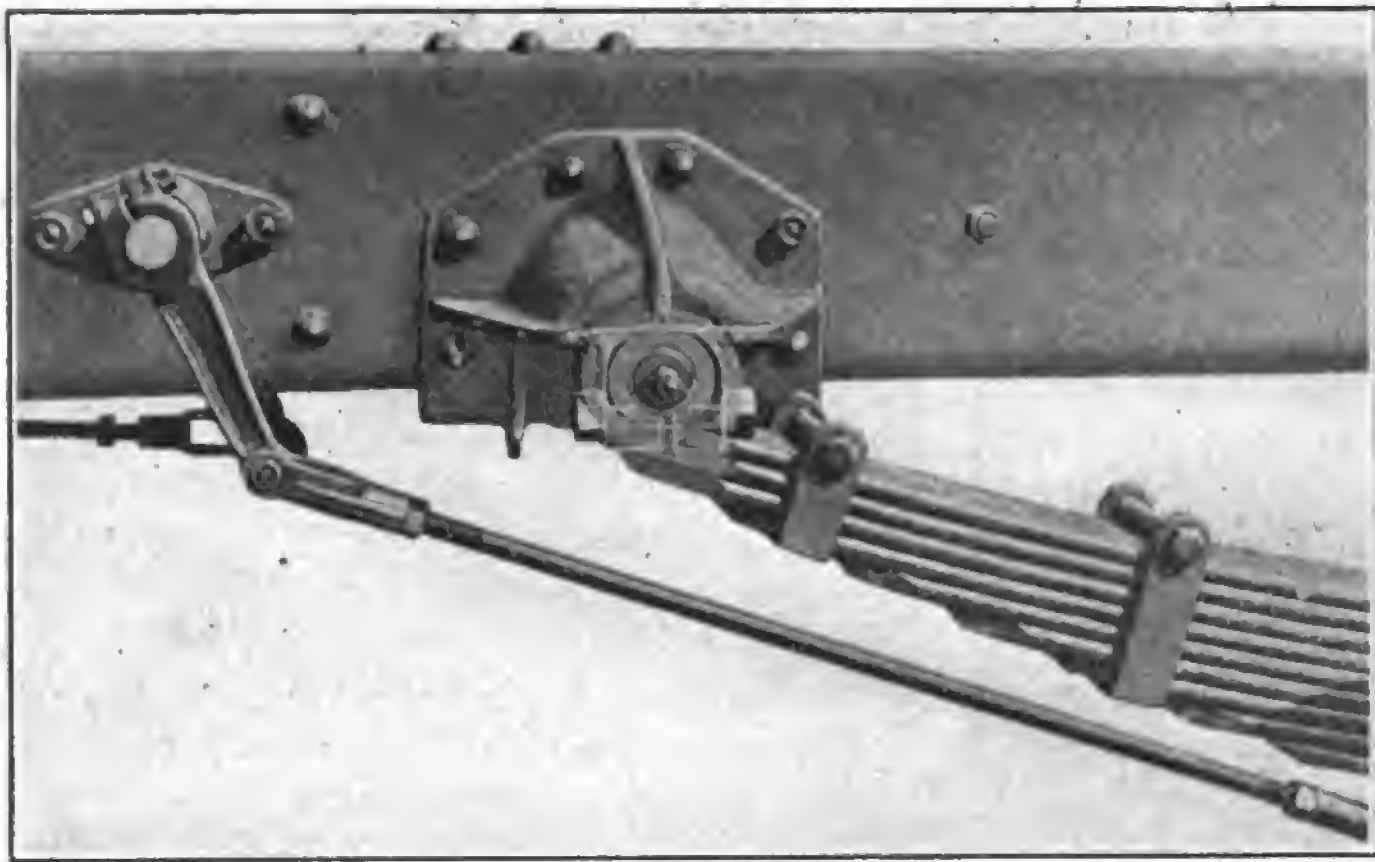
The crankshaft is drop forged from a special alloy steel with the flywheel flange integral. It is a three-journal type that is drilled for force feed oil distribution and it is heat treated, machined and balanced on a special machine, the journals being ground to dimensions. It is fitted with two oil shields to prevent leakage at the rear end. The camshaft is drop forged from open hearth steel, machined and case hardened. The cams, which are forged integral, are ground on a special machine. A flange to which the timing gear is bolted is forged integral with the shaft.

Connecting Rods, Bearings and Gears.

The connecting rods are drop forged from chrome vanadium steel and are a straight I section. They are heat treated and carefully balanced. The wristpins are steel tube, case hardened, ground to



Plan View of the Model 35 Jumbo Truck Chassis, Showing the Unit Power Plant, the Power Transmission System, the Clark Internal Gear Axle and the Strongly Reinforced Semi-Flexible Frame.



The Mounting of the Forward Ends of the Rear Spring of the Jumbo Truck, Cutaway to Show the Double Wrap of the Bolt to Insure Against Breakage.

size, that are retained by lock screws of two diameters extending through both sides of the pins, and by spring retainer rings which expand in grooves turned in each end of the piston bosses.

The main and crankpin bearings are babbitt metal mounted in bronze cages that are fitted with shims for accurate adjustment and the crankpin caps of the connecting rods are each retained by four heat treated alloy steel bolts. The three camshaft bearings are die cast babbitt metal, and the wristpin ends of the connecting rods are bushed with phosphor bronze, the rods oscillating on the pins.

The timing gears are large diameter with wide faces and are helical cut, and careful attention is given to centering. The valves are high tungsten steel and are fitted in large renewable guides, and the mushroom type tappets, fitted with adjusting screws and nuts, operate in guides that are readily removable.

Engine Lubrication and Cooling.

The engine is lubricated by oil drawn through a screened intake in the reservoir by a gear pump operated by the camshaft and forced through a seamless steel manifold cast in the crankcase to the main and camshaft bearings and the timing gearset, and from the bearings through drilled channels in the crankshaft to the crankpins. The oil distributed by the centrifugal motion of the crankshaft lubricates the cylinders, pistons, the cams and valve tappets. The design of the reservoir is such that the sediment collects apart from the pump intake and may be readily drained.

The engine is cooled by a circulation of water through the engine jacket forced by a centrifugal pump having a bronze impeller, with steel glands and bronze sleeves over the shaft prevent rusting and pitting. Assembled as a unit the pump and shaft may be removed separately or as an assembly. The water circulates through a tubular radiator with cast top and bottom tanks, which may be easily disassembled for cleaning or repair, the rear of which is shrouded, and through which the air is drawn by a large fan mounted on a bracket integral with the timing gearset cover that is driven by a flat belt from a pulley on an extension of the water pump shaft. The radiator is spring mounted, and it is

by a Duplex governor and to 14½ miles an hour when equipped with pneumatic tires.

Special Type Transmission Gearset.

The clutch is a Brown-Lipe multiple dry disc type that is practically self-compensating and requires comparatively little attention, and this is assembled with a Brown-Lipe selective type sliding gear transmission gearset having four forward speed ratios and reverse. The gearset countershaft is extended and there are special apertures for installing a power take-off, so that a winch, hoist or tire pump, or all three may be used if desired. This is an unusual adaptation, for with it practically any desired result may be obtained.

The engine is mounted on arms cast integral with the bell housing and a forward trunnion that can be carried on a frame cross member or a special yoke, and it is installed with an inclination of two degrees and 20 minutes from the horizontal, from front to rear, so that the crankshaft and the drive shaft are practically in line under load. This manner of engine mounting has been worked out with the sanction of the engineers of the Buda Co., and it is claimed to deliver a larger ratio of power at the rear wheels in tractive effort because of the reduction of angularities at the universal joints.

The power is transmitted through a two-section tubular shaft, with three Arvac universal joints, that is coupled to the pinion shaft of the Clark internal gear drive axle. The rear end of the forward section of the shaft is mounted in a large bearing carried on a cross frame member, the bearing being self-aligning. The load carrying or dead axle is a round section, drop forged

fitted with a shutter that is manually controlled from the driver's seat, and with a motometer, and it is protected by a vertical bar guard that is supported by diagonal braces from the side members of the frame. The source of the ignition current is an Eisemann high-tension magneto and the fuel is supplied through a Zenith carburetor. The engine is governed to 13 miles an hour on solid tires

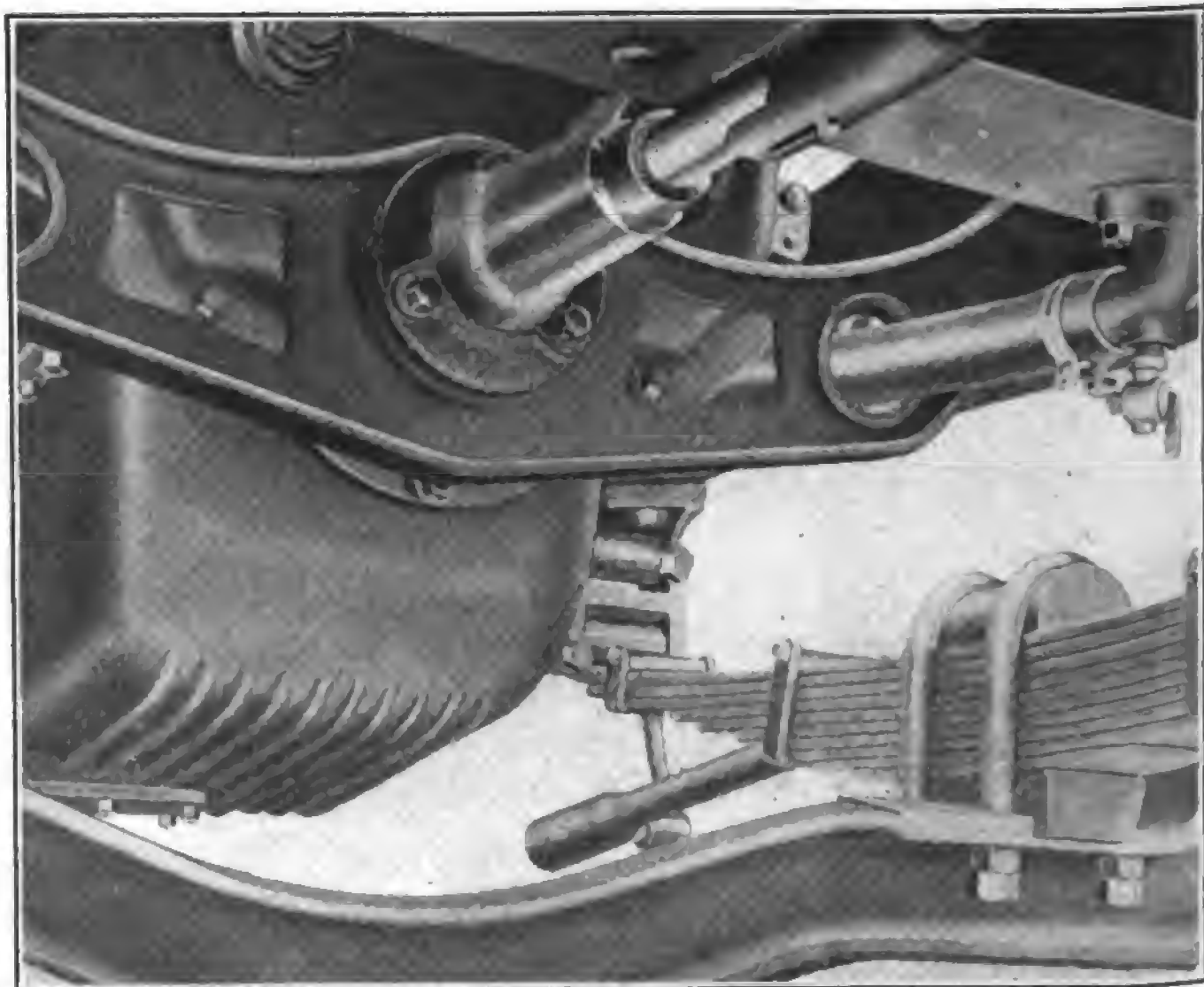
from a special alloy steel, and mounted ahead of this is the countershaft, enclosed in a cast metal housing, the ends of which are supported by the brake flanges. The spur pinions on the outer ends of the shafts are meshed with the internal gears bolted to the wheels, and these are enclosed in dust and grease tight housings. The pinion shaft is mounted on New Departure annular ball and Hyatt roller bearings, and the differential, jackshaft and wheel bearings are Hyatt. The axle reduction is 10:1. The front axle is a drop forged I section, heat treated, with heavy steering knuckles, the spindles being fitted with Bock roller bearings.

The frame is pressed steel channel section, strongly reinforced with cross member and gusset plates, and with diagonal braces at the rear end to resist the stresses of the spring-buffed drawbar, which is installed for use with a trailer. This is suspended on semi-elliptic springs, the forward set being 46 inches long and 2½ inches wide, and the rear set 62 inches long and 3½ inches wide. No radius rods are used, the driving and braking stresses being taken by the rear springs. Both the master and the first leaves are full length and the ends of the first leaves are wrapped around the eye of the master leaves with sufficient clearance for deflection and reflexion so that, in the event of breakage of the master leaves the truck can be driven until repair can be made.

Wheels and Tire Equipment.

The wheels are steel and the standard wheelbase is 165 inches, with option of 183 inches if a long chassis is desired. The wheels are shod with 36 by five-inch solid bands or 38 by seven-inch pneumatic shoes forward, and with 36 by 10-inch solid bands or 44 by 10-inch pneumatic shoes rear. When the chassis is unloaded the load weight is equally distributed on each axle, but when loaded 25 per cent. of the weight is on the front axle and 75 per cent. on the rear axle.

The steering gear, a heavy truck design, is located at the left side, and the



The Forward Support of the Jumbo Unit Power Plant, the Radiator Hose Connection Extending Through One of the Openings in the Steel I Beam.

control is by foot pedals for the clutch and service brake, with ignition and fuel levers on the steering wheel, with hand levers for shifting the gear ratios and the emergency brake in the center of the footboard. The brakes are internal expanding, operating within drums on the rear wheels.

Much care has been given to the endurance of the chassis. All the parts in moving contact are large and are carefully lubricated and, so far as possible, enclosed to prevent the accumulation of abrasives. The Alemite system of grease lubrication has been adopted, the grease being forced into the bearings at 250 to 500 pounds pressure from a grease gun that has a capacity of five pounds of lubricant. With this system there is no question of adequate greasing, provided that replenishment is made at the intervals recommended.

General Chassis Equipment.

On the forward ends of the frame side members are pigtail towing hooks, so that there shall be no stresses upon the front springs or axle should there be occasion to tow the machine with another truck or tractor.

The 30-gallon gasoline tank and the driver's seat and steel cab are mounted on a steel sub-frame that is bolted to the main frame through the webs of the side members, that the flanges shall not be weakened. The tank is mounted on the sub-frame by steel straps attached to adjustable anchor bolts. The cab is standard equipment and a feature is the design of the fore doors, with the curtains mounted on frames which slide like sedan windows into panels in the doors. The top of the cab is wood, which construction insures against vibration and noise. Above the dash is a rain vision windshield set in rubber.

The additional equipment includes fenders and running board, electric head and tail lamps, storage battery, generator, electric horn, hub odometer, Alemite grease gun, tool kit, demountable rims when shod with pneumatic tires, and power tire pump. The chassis will be equipped with engine starter for \$150 additional. When equipped with pneumatic tires the chassis is rated at 8000 pounds load capacity. The body allowance is 2000 pounds.

This truck is the first of the Jumbo series which will be built to what is practically a single design, and which will have load capacities of 3000, 4000, 5000, 7000 and 8000 pounds.

DAILY FREIGHT SERVICE PROVES A SUCCESS IN IOWA.

The Vinall & Benson Transport Co. of Davenport, is running a successful daily freight service in Iowa which it is already planning to expand, adding new territory to the 18 towns and 800 farms it now serves. O. A. Vinall and B. J. Benson are the men behind the project and they have made rural express a popular transportation medium in their field. Three trucks are now being used, but it is intended to add more shortly. The trucks have not missed a day during the severe winter.

Plan Clearing House for Advertisers of M. & A. M. A.

Advertising managers and executives of the 300 companies affiliated with the Motor and Accessory Manufacturers' Association are to hold a banner get-together meeting at New York, March 26, for the purpose of organizing a central clearing house for constructive co-operative work on advertising problems as they effect the automotive industry. This association constitutes one of the strongest and most influential group of advertisers in America.

The following are some of the concrete problems already presented for the council's attention:

(a) A study of the function of the advertising agency and its value to the advertiser.

(b) The determination of the amount of the advertising appropriation and the allotments for the various forms of advertising.

(c) The relation between the sales and advertising departments.

(d) The furnishing of dealer helps, electrotypes and advertising literature to dealers.

(e) The training and development of advertising personnel.

(f) New tendencies in the technique of automotive advertising—in copy, art work and lay outs.

(g) The sharing of advertising expense with the dealer.

(h) The problem of newspaper publicity sent out by the factory, and by the dealer: Co-operation with the general and trade press, and with the automobile editors of the metropolitan newspapers.

(i) Counting the costs and gauging the results of your advertising.

(j) Advertising and sales problems in relation to the automobile shows and exhibitions.

(k) Representation in and co-operation with the general advertising organizations of national scope.

(l) Miscellaneous plans for the elimination of waste in advertising, for reducing costs, for co-operative economy and for improvement and standardization in automotive advertising.

(m) Advertising for foreign trade.

FAR EAST VEHICLE IMPORTERS.

The trade lists of motor vehicle importers in far eastern countries have been consolidated and revised, and may be obtained by requesting the Bureau of Foreign and Domestic Commerce, Washington, D. C., for the corresponding numbers. China, FE-13,011; Manchuria, FE-14,002; Hongkong, FE-15,002; Indo-China, FE-16,001; Siam, FE-17,002; Dutch East Indies, FE-19,001; Philippines, FE-25,001; Australia, FE-23,007; Hawaii, FE-26,001; Japan, FE-11,003; British Malay, FE-18,002; India, FE-21,003, and New Zealand, FE-24,004.

NEW FORD GAS STREET CAR LOOKS LIKE A WINNER.

The new Ford gas car, which will be run on the municipally owned street railway lines of Detroit, if the voters decide to issue bonds for that purpose, will be ready next month for the test run to Chicago over the Michigan Central tracks. Mayor Couzens and members of the council recently saw the body mounted on the chassis and were made acquainted with the details of the construction by General Manager C. E. Sorenson.

The mayor and officials expressed themselves as more than satisfied with the new car and believe that it will impress the voters in a city of mechanics so forcibly as to carry through the bond issue plan by an overwhelming majority. The fact that the street cars are built at home and the general confidence in Henry Ford and his officials are expected to count strongly in the balloting.

TRUCK DEALERS ON 300-MILE TOUR OF FLORIDA.

Starting March 29 truck dealers under the auspices of the Jacksonville Automobile Dealers' Association will tour 300 miles of the rural districts of the state to show the possibilities of the truck as a freight carrier and demonstrate the advisability of motorizing Florida farms.

Dealers to have trucks on the tour include the following: Mangles-Kirby Co., Florida Armleder Truck Co., Riddle-Pettingell Co., Stanley Motor Co., United States Motor Truck Co., W. C. Thomas (Indiana distributor), Southern Nash Motors Co., Automobile Sales Co., Federal Sales Co., J. B. Williams & Co., Southern Motors Co., Barnett-Cawley Co., William A. Estaver, Oshkosh Motor Truck Manufacturing Co., Reagan-Denton Motor Co.

LEAGUE OF NATIONS MAY STOP GASOLINE PROFITEERING.

England wants the members of the League of Nations to take joint action for their mutual protection against alleged profiteering in gasoline, benzol and other motor liquid fuels. Retail prices for these products may be fixed in England following the charge that powerful financial interests are taking advantage of the deficiency of motor fuel to raise prices. The production of power alcohol under government encouragement and control is urged. That there is an enormous profit in petrol at present market prices is alleged.

LIKES TRUCK; TURNS AGENT.

F. F. Silver of Cantril, Ia., operator of a big farm and breeder of fancy hogs, for one of which he has turned down an offer of \$25,000, recently decided he could not get along without a motor truck. He bought a Model II Republic from the Consigny Motor Truck Co. at Des Moines and was so impressed with his new purchase that he sought and secured the agency for Republic trucks in his territory.

MOTOR TRUCK RELIABILITY RUN TO BE GREAT CONTEST.

The First National Motor Truck Reliability contest, to be run out of Omaha next June under the official sanction of the Contest Board of the American Automobile Association, appears destined to be the greatest contest ever known in the field of the commercial vehicle. Manufacturers, press and public are alike in their display of interest.

Twenty-four days will be spent on the road, with four Sunday stop overs. No driving is scheduled on Sundays. The tentative route is 2500 miles, but the final routing will be determined when the pathfinder makes the trip in May. Road conditions, population, condition of bridges and the ability of the various cities and towns to care for the contestants will be considered.

The routing will take the participants through the most fertile agricultural district in the United States, Nebraska, Wyoming, Colorado, Kansas, Missouri, Iowa and South Dakota. The contest is to be what is known as Grade 1-Class K, under special rules prepared by General Manager Charles P. Root, representing the Contest Board.

Only pneumatic tired trucks will be used and entries will be limited to a carrying capacity of $3\frac{1}{2}$ tons, fully loaded. In addition to the grand trophy there will be a trophy for the winner in each of the five divisions. The principal prize will be the Omaha Bee trophy, donated by the Bee Publishing Co., underwriters for the event.

GOODYEAR TIRE SALES.

The Goodyear Tire & Rubber Co., Akron, O., now has 30,393 employees on its payroll in Akron alone, the largest number in its history. When new extensions are completed this number will be greatly increased. The reason for this mighty work army is shown in the report of sales for January of this year, which reached the unprecedented figure of \$19,228,000, as compared to \$8,900,000 in the same month of 1919.



Acson 1½-Ton Truck, with Pneumatic Tire Equipment, Operated by the Goodyear Tire & Rubber Co., from Its Providence, R. I., Branch.

GMC EXPORT MANAGER SEES BOOM IN TRUCK TRADE.

P. S. Steenstrup, general manager of the General Motors Export Co., the export division of the General Motors Corporation, recently concluded a tour of the Allied countries and is greatly enthused over the foreign market for American motor trucks. He visited England, France, Belgium, Switzerland and Italy. Everywhere the American vehicle has won its way to popularity by actual performances.

At the same time the possibilities and emergency value of the motor truck has not been fully grasped, as was evidenced by an incident in France, the shipping of the GMC cars overland on trucks from the ports to the Paris show when the railway service fell down causing wonderment and gaining wide press comment.

Mr. Steenstrup, after dealing with the admiration with which American trucks are regarded in all Allied countries, concludes: "Europe as a whole is willing and anxious to do business on a give-and-take basis and when the subject of credits has been arranged and the exchange rate more nearly approaches normal we can count upon a large and permanent export trade that will surpass our greatest hopes of a few years ago."

WORTH OF TRAILERS SHOWN.

A Fruehauf trailer, bearing the great part of a 15-ton load, recently followed a low-powered tractor over an incline, elevation and bridge at Detroit, increasing the possible load by 350 per cent. at about 10 per cent. increase in the cost of operation. The load was of structural steel, more than 40 feet in length, and was being hauled for the Whitehead & Kales Co. Iron Works.

A three-ton Fruehauf trailer, attached to a $3\frac{1}{2}$ -ton electric truck, both heavily loaded, recently ploughed through deep snow at Cleveland as satisfactorily as any gasoline vehicle could have done. The truck was a product of the Baker, Rauch & Lange Co., Cleveland.

SERVICE MANAGERS' DIVISION OF NATIONAL CHAMBER.

A highly important step by the National Automobile Chamber of Commerce is the recent establishment of a service managers' division to function along similar lines to the foreign trade, traffic, legislative, patents, highways and other departments.

Constant touch will be kept with service managers and bulletins covering new policies and systems will be mailed. Conventions and other meetings will be arranged for the discussion of timely trade topics. The department will co-operate with other automobile associations.

Material assistance will be given branches and dealers by encouraging and assisting in the establishment of local organizations, of dealer and garage service men. Efforts will be made to standardize the methods in vogue in automobile schools.

Manuals will be prepared showing how the more common repairs and overhaul operations can be handled with a minimum of time and material. The department will also act as an employment clearing house.

H. R. Cobleigh, former secretary of the Foreign Trade Department of the National Automobile Chamber of Commerce, has been appointed secretary of the new service department, which aims to bring about more standardization and better service conditions in the automobile plants and in the stations of distributors and dealers.

DEMAND FOR TRUCKS TO EXCEED SUPPLY FOR FIVE YEARS.

Albert Fisher, president of the Standard Motor Truck Co., is authority for the forecast that the supply of motor trucks will not meet the demand within five years. This statement was made following an extensive tour by President Fisher through the South, extending to Cuba.

Mr. Fisher points to the fact that the nation wide movement toward the construction of good roads will open new territories and avenues of distribution. In the South good weather prevails throughout the year, the selling season therefore having no limit.

Mr. Fisher says Cuba wants American trucks, but the trade is peculiar and must be handled by representatives experienced with the local methods of merchandising.

UP-TO-DATE IN SASKATCHEWAN.

Saskatchewan is reported to have more motor vehicles than any other province in Canada. During 1919 nearly 60,000 licenses were issued. Of these 54,801 were for private cars and 1584 for auto livery. Dealers' cars numbered 944 and garage cars 190.

BUY \$12,000 FIRE ENGINE.

The Salisbury, Md., city council has placed an order for a modern automobile engine for its fire company at a cost of \$12,000.

NEW TYPES OF BUDA TRUCK ENGINES

PRODUCTION has been concentrated by the Buda Co., Harvey, Ill., on eight sizes of engines, which are specified as DTU, CTU, FTU, ETU, XTU, YTU, ATU and BTU, and which are built to one design. The company states that it can furnish this complete series ranging from 3½ to five inches bore and from 5¼ to 6½ inches stroke. These engines are built especially for heavy duty, for trucks and tractor construction, and claim is made that they include all the qualities that have been proven necessary to insure dependability and satisfactory service.

The engines are maintained to be the results of years of experience combined with careful study of actual operating conditions in all parts of the country by engineers who are specialists in the maintenance and repair of engines. The Buda engines are not experimental, but are built to adequately meet all requirements of increased speed and carrying capacity; to be worked constantly by all classes of drivers, and to be adjusted and

XTU	4¼	6
YTU	4½	6
ATU	4¾	6½
BTU	5	6

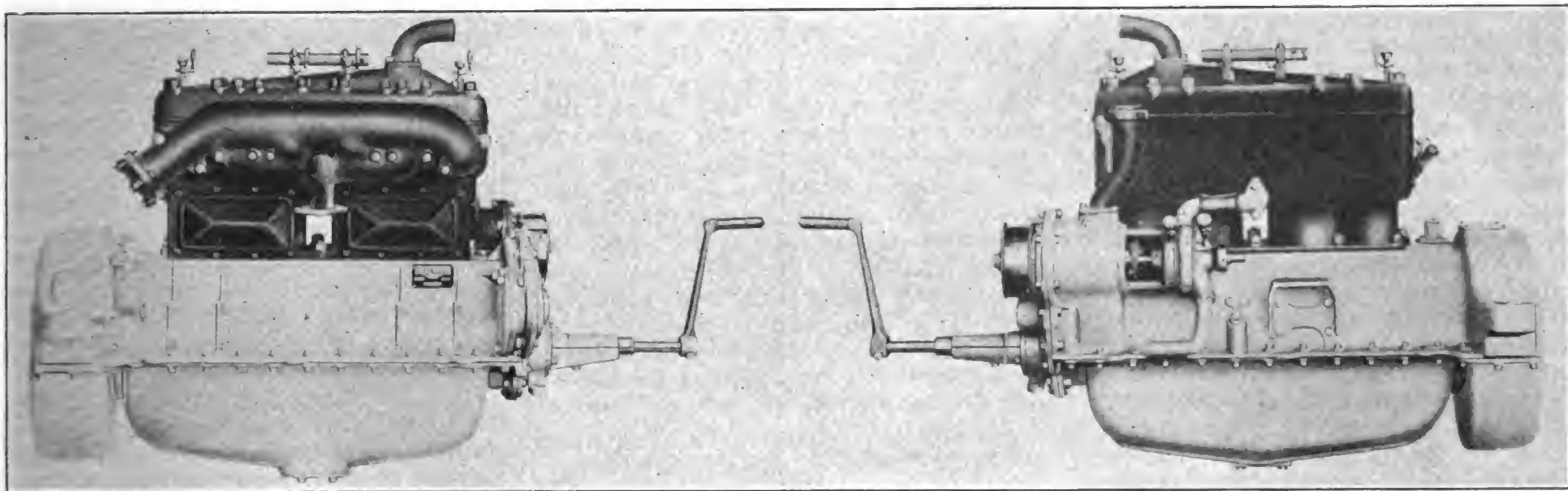
The company also builds models RU, with bore of 3½ and 5½ inches stroke, and WU with bore of 3¾ and 5½ inches stroke.

Design Is Standardized.

The group of eight engines are all lubricated by full forced feed systems. One of the improvements is the water outlet of the cylinder jacket, which is fitted with a removable elbow, which may be placed in any one of four different positions. The water pump and the drive shaft may be removed as a unit or separately. The oil reservoir forming the base of the crankcase may be taken off without dismantling the housing of the flywheel. As the intake and exhaust manifolds are cast with the cylinder block the best results are obtainable from the low grades of fuel, which are usually the only kind obtainable.

through which the lubricant is forced to the main bearings, the camshaft bearings and the timing gearset. The forward extension houses the timing gearset, and the rear extension forms the upper part of the flywheel housing, the housing being completed by a separate casting. The lower section is divided by a readily removable plate into upper and lower compartments, the former being the crank chamber and the lower the oil reservoir. There is a large central plate on the base of the reservoir on which is seated the screened intake of the oil pump, and below this is a sediment chamber of considerable capacity fitted with a drainage plug. The entire section may be taken off for cleaning or adjustment, or the oil pump or the filter can be taken out by removing the plate. The intake screen is very large to insure against clogging.

The pistons are cast from the same material as the cylinders, with liberal ribs on the heads to insure the diffusion of heat. They are channelled for three



The New Type Buda Truck Engines Are Built to a Standard Design, with the Crankcase Lower Section Separate from the Fly-wheel Bell Housing. Both Sides of the Unit Are Shown Without the Fan.

repaired by average repairers with minimum delay and cost, either on the road, in the field or in the garage.

Four Groups of Two Units.

All these Buda engines are four-cylinder, four-cycle, water cooled, L-head, vertical machines, and the range of sizes is such that they are grouped in pairs, so that a truck manufacturer can use two sizes with the same mounting dimensions, which will allow one size for solid tire chassis and a larger size for chassis equipped with pneumatic tires. The engines are built with detachable cylinder heads, with the exhaust and intake manifolds cast integral with the cylinder blocks, which has been characteristic of the model HTU engine for several years.

The engines may be divided into four groups as follows:

Model	Bore In.	Stroke In.
DTU	3½	5¼
CTU	3¾	5¼
FTU	4	5½
ETU	4¼	5½

The cylinder blocks are cast from high grade gray iron with the water jackets integral, and the water chambers are unusually large and are designed to obtain exceptionally free flow of water. The jacket inlet is located, and the jacket is so baffled, that the water is received directly under the valves and circulates around the cylinders. The heads are cast separately and are liberally jacketed, the spark plug bores being entirely surrounded by water, and there is a direct flowage across the combustion heads, insuring the fullest degree of cooling. The head is retained by a series of studs, so spaced as to obtain uniform pressure upon the gasket. The intake and exhaust manifolds are cast as a single unit, one type for gasoline and another for kerosene fuel, the design being intended to obtain good combustion of low grade fuel.

Crankcase and Pistons.

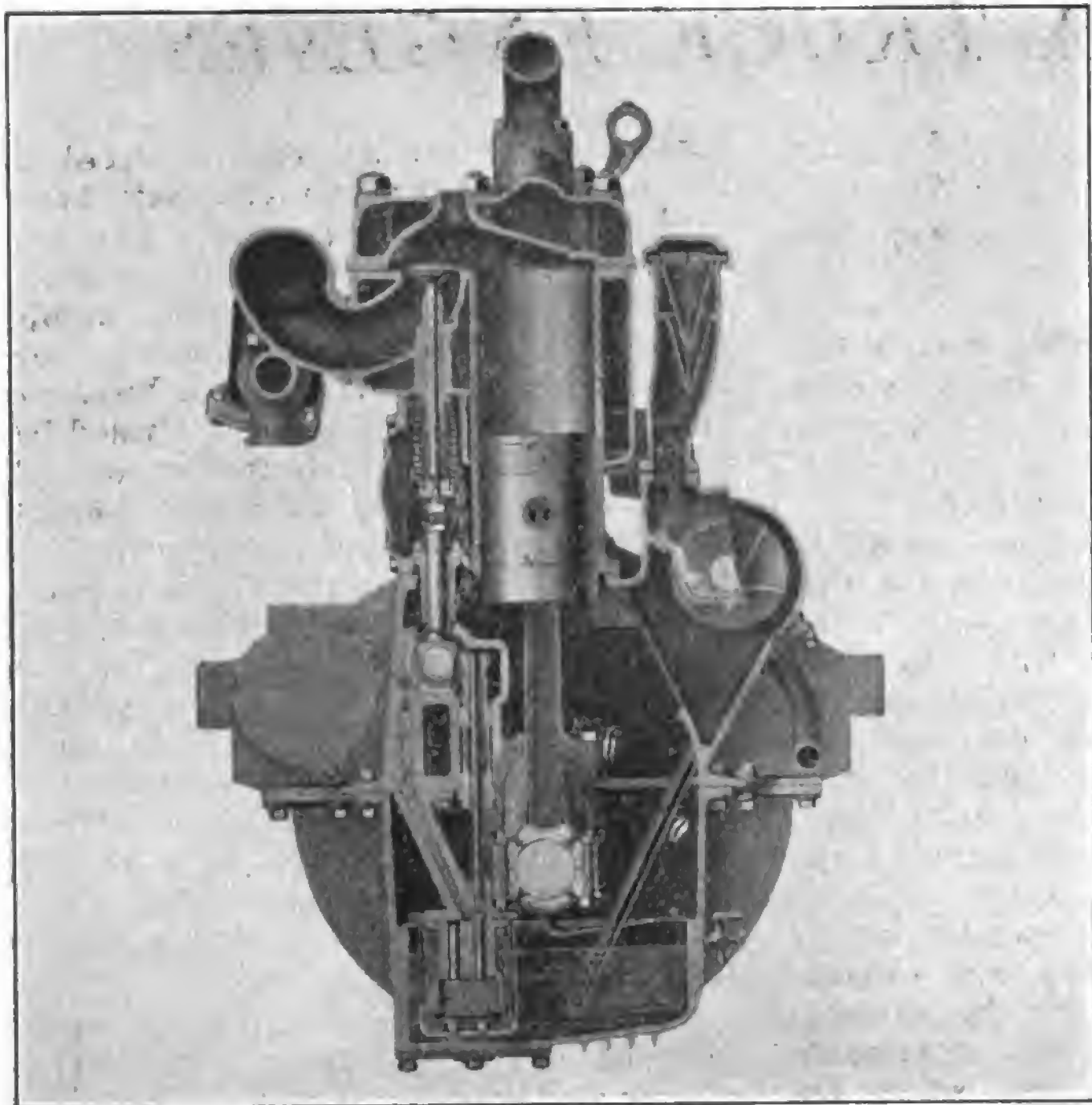
The crankcase is cast from gray iron in two sections, the upper portion being divided by a transverse vertical web that carries the center main bearing. In this is cast the seamless steel manifold

concentric rings above the wristpins and a wiper ring at the base of the skirts, the wiper ring distributing the lubricant and preventing an excess passing up in the cylinders to the combustion chambers. The wristpin holes are bored with much care to insure perfect alignment, accurate size and smooth finish, and a balancing pad may be machined to obtain a given weight and balance.

Crankshaft, Camshaft, Connecting Rods.

The crankshaft is an open hearth steel drop forging that is formed with the flywheel flange integral and with three large journals. It is heat treated, machined and balanced on a special balancing machine, and it is drilled for pressure lubrication. The shaft has a tensile strength of 120,000 pounds to the square inch and an elastic limit of 85,000 pounds to the square inch. The journals are accurately ground and at the rear end two oil shields are fitted that prevent leakage at the rear bearing.

The camshaft is drop forged from open hearth steel with the cams and the timing gear flange integral. It is machined and case hardened, and the faces of the



The Buda New Type Engine in Cross Section to Show the General Construction and the Lubricating System.

cams and the large bearings are ground on a special machine. The cams are unusually wide and are designed for endurance and quietness. The timing gears are four in number, or five when a generator is used, and these are large diameter and have wide faces. They are helical cut on automatic hobbing machines and much care is taken to obtain accuracy of centers.

The connecting rods are chrome-vanadium steel, I section drop forgings that are heat treated, and the wristpins are steel tube, case hardened and ground, that are large diameter. These are secured in the piston bosses by two diameter lock screws that extend through both walls of the tubes, and by spring retainer rings that expand in grooves turned in each end of the piston bosses.

Bearings and Valve Mechanism.

The main and crankpin bearings are high grade babbitt metal in bronze cages, the connecting rod caps being secured by four alloy steel heat treated bolts. These bearings are adjustable with shims. The three camshaft bearings are die cast babbitt metal. The small ends of the connecting rods, which oscillate on the wristpins, are bushed with phosphor bronze.

All reciprocating parts of the engine are carefully balanced by proportioning and weighing to minimize vibration when running and claim is made that this attention to design materially prolongs the service life of the machine.

The valve mechanism is enclosed by two cover plates that are readily removable, being retained by series of cap screws. The valves of the larger engines are high tungsten steel that operate in long guides, and they are actuated by barrel-type, self-centering springs that insure against side thrust on the valve stems. The valve springs and the valve spring cups are secured by split

type retainers and there can be no wear of the spring retainer locks or the grooves in the ends of the valve stems. The tappets are large, a mushroom type of special steel, that are easily removable, and they are fitted with adjusting screws with lock nuts.

The lubrication is by a full pressure system. The oil is drawn through a large filter screen surrounding the intake of the oil pump. The pump is a gear type that is driven by the camshaft and is secured to the upper section of the crankcase and is independent of the lower section. The oil is forced through a seamless

steel tube manifold cast in the upper crankcase section to the main bearings, the camshaft bearings and the timing gearset, there being a pressure regulating valve that insures against excess pressure. From the main bearings the lubricant is forced through the drilled crankshaft to the crankpins. The oil thrown from the crankpins lubricates the cylinder and piston walls, the cams and valve tappets and valves. The drainage from the crank chamber is carried through a vent in the plate to the reservoir.

The engine is cooled by a circulation of water forced through the cylinder jacket and a radiator of the type to best meet the requirements of the constructing engineer, by a centrifugal pump having a large bronze impeller, having large packing glands and bronze sleeves that are fitted over the shaft to prevent rust-

ing and pitting. The assembly can be removed as a unit or the pump and the shaft may be taken out separately. The fan bracket support is cast integral with the timing gear case cover and a pulley with a face two inches wide is attached to the forward extension of the pump shaft.

Adaptation for Equipment.

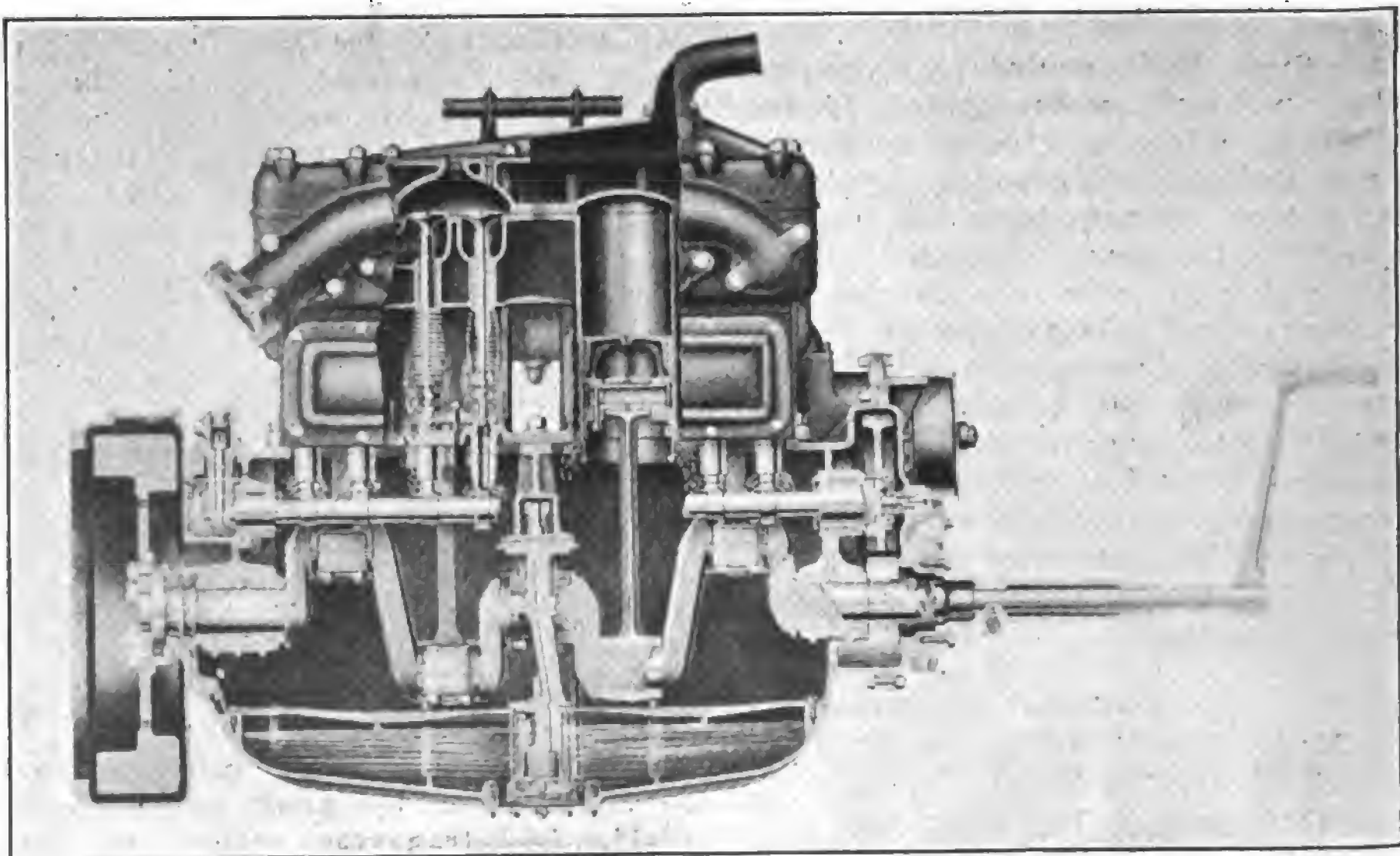
The engine case is designed for installing starting and lighting equipment, the generator to be driven by a gear meshing in the timing gearset, and for driving a magneto from the end of the water pump housing. The governor pedestal is behind the rear end of the cylinder block and the vertical shaft is driven by the camshaft. Care has been taken to have the auxiliaries accessible to minimize time and labor when adjustments or repair are necessary.

The engines are designed to be suspended at three points, the rear arms being cast integral with the upper section of the crankcase, and at the forward end at crank center by a large trunnion bracket that may be carried on a frame cross member. As has been stated, either of two sizes may be installed in a chassis having standard dimensions, the smaller engine when the wheels are shod with solid tires or the large when the tires are pneumatic.

The RU and WU Engines.

The RU and WU engines are generally the same type, but differ slightly from the constructional detail specified. The cylinders are cast en bloc, but the water jacket is somewhat larger because the cooling is by thermo-syphon circulation, and the valves are contained in a single chamber instead of two, this being enclosed by a single cover plate retained by lever clamps.

The crankcase is cast iron or aluminum alloy, cast in two sections, there being forward extensions of the upper half to enclose the timing gearset and rear extensions that are the upper halves of the flywheel housing. The rear of the lower section is extended to complete the bell housing. Special lugs are cast on the lower section to carry the dust pan, so that this may be independent of



Section View of the Buda Engine Showing the Location of the Oil Pump and the Manner of Circulating the Lubricant.

the frame. At the rear of the right side of the lower section is the housing for the oil pump, cast integral with the section, and on the bottom of this is a plate. By taking out a plug the oil well may be drained, and by removing the plate the filter and the oil pump can be taken out. By removing the lower section the main and crankpin bearings can be reached for inspection or adjustment or repair. The camshaft bearings of these engines are phosphor bronze.

The intake manifold of these two units are cast integral with the cylinder blocks and being water jacketed the fuel drawn from the carburetor is preheated, insuring a better mixture. The carburetor is a side outlet type. The exhaust manifold is a separate unit.

Pressure Splash Lubrication.

The oiling system differs somewhat from the other engines, the lubricant being pumped through a screen surrounding the intake by a gear driven pump actuated by the camshaft and forced through tube to the tops of the main bearings and the timing gearset. The overflow drains to the base of the crank chamber and accumulates in troughs into which the ends of the connecting rods sweep and distribute oil by splash to the cylinder and piston walls, the camshaft and wristpin bearings, the cams, valve tappets and valves. The overflow of the troughs drains to the reservoir. An indicator close to the breather shows the oil level in the reservoir. The engines are cooled by fans carried on shafts on ball bearings that are adjustable to obtain belt tension. The design is for three-point suspension and for the use of standard auxiliaries.

RELATIVE MERITS OF BEARINGS DISCUSSED AT DINNER.

The March dinner of the Minneapolis S. A. E. section was enlivened by a three-cornered battle as to the relative merits of ball, taper, roller and straight or plain roller bearings by spokesman for the S. K. F. Industry, Inc., the Timken Roller Bearing Co. and the Hyatt Roller Bearing Co. The virtues of these three types of bearings were never better explained.

While the battle was only verbal the discussion was decidedly enthusiastic and it was necessary for A. William Scarratt of the Minneapolis Steel & Machinery Co. to relieve the tension by expressing the opinion that the bearing question was greatly influenced by design and production of whatever piece of automotive apparatus into which the bearing was to be installed. A tractor, he pointed out, is designed to meet requirements of ball bearings in all its parts.

NEW HAYES WHEEL PLANT.

The Hayes Wheel Co. of Canada will manufacture truck wheels, passenger car wheels and do special repair work on passenger car and truck wheels in the plant of the Dominion Wheel Co., Ltd., say, Ont., which has been closed for three years, and which the Hayes company has re-equipped with modern machinery for the purpose.

Quarterly Dividend of 5% on General Motors Stock

The General Motors Corporation, which has been in the stock market spotlight recently, on March 25 declared a quarterly dividend of five per cent. on the old common stock, half in cash and half in new stock, the latter being the same as the subdivided old shares, which are being exchanged for new stock on a basis of 10 to 1. The dividend on the new shares is 1/10 that on the old.

The regular quarterly dividends of 1½ per cent. on the preferred, 1½ per cent. on the six per cent. debenture stock and 1¼ per cent. on the seven per cent. debenture stock also were declared. All of the dividends are payable May 1 on stock of record April 5.

The new dividend on the old stock, if continued, would be at an annual rate of 20 per cent. as compared with the present 12 per cent. cash dividend rate. The dividend on the old common for this quarter is \$2.50 in cash, together with a quarter of a share of new no par value common stock, which has been selling around \$40 a share. The quarterly dividend is therefore actually worth about \$12.50, or \$50 a year.

An announcement of interest was the statement that future dividends will be paid on the new shares.

It is understood that the company earnings were in the neighborhood of \$60 a share on common stock after deducting Federal taxes.

General Motors aims to produce 612,000 vehicles this year as against 467,000 in 1919. In the first five weeks of the year the company turned out 49,000 passenger cars, trucks and tractors, an increase of 125 per cent. over the output during the same period last year.

AUTOMOTIVE BUSINESS SECOND AMERICAN INDUSTRY.

The automotive business will this year take second rank among the industries of the United States, taking back water only from steel, the National Automobile Chamber of Commerce announces. Motor vehicle production in 1919, with bodies and accessories included, passed the two billion mark, the vehicle production alone being \$1,807,594,580.

New York state led in auto registration with 570,000, Ohio coming next with 511,000. Nebraska and Iowa were the leaders in proportion to population, one of every six persons in those states having a car. Expansion of car manufacturing and tire companies is keeping pace with the increased registration.

COMET PRICES ADVANCE.

The price of the Comet 1½-ton, triple tread worm drive truck has been increased to \$1950 from \$1750. It is the product of the Comet Automobile Co., Decatur, Ill.

MOTOR HAULAGE ANALYSIS BY THE ONEIDA COMPANY.

The Oneida Motor Truck Co., Green Bay, Wis., has formed a motor haulage analysis department, in charge of high class experts, which has already demonstrated its usefulness and is already headed toward a noteworthy future. The bureau aims to place at the disposal of truck operators, fleet owners and dealers handling Oneida gasoline and electric trucks a service which should get out of every truck every ounce of its worth. The service is available in the organization of express and bus lines and similar transportation efforts.

The cost of operation and the methods by which it can be cut, the haulage conditions and how they can be improved, and all questions entering into the running of motor vehicles, will be studied by the bureau and the owner given the benefit of these investigations. One of the chief accomplishments of the new departure has been the truck express lines operating in divisions and making a direct line from the Michigan mines through to Chicago.

Included in this department are W. C. Calvert, former general manager of the Chicago Taxi Co. and superintendent of motor equipment for the Wells Fargo Express Co.; R. J. Burns, formerly superintendent of equipment for the American Railway Express Co.'s Chicago district, and Newton Cox, who had active charge of 1600 trucks for the Sinclair Oil Co.

RAILROADS TO BE BIG MARKET FOR MOTOR TRUCKS.

C. B. Stanley, manager of the Research Bureau of the Four Wheel Drive Auto Co., Clintonville, Wis., comes to bat with the prediction that the railroads of the country will furnish an enormous market for motor trucks at an early day. He declares the "Ship by Truck" method of transportation demonstrated its worth so forcibly during the war that sharp railroad officials, now running their own roads again, will race each other in installing fleets of trucks, as necessary adjuncts to their lines.

The truck has been shown to be faster, safer and more economical for short hauls, and rather than see outsiders gain by this knowledge the railroad men are expected to get in on the ground floor and reap the profit themselves.

LARGE ADDITIONS TO DIAMOND T TRUCK PLANT.

The Diamond T Motor Truck Co. is to enlarge its plant at 4517 West 26th street, Chicago, at the cost of \$250,000. The total additional floor space will be approximately 114,000 square feet, of which 60,000 will be given over to the sales promotion, purchasing and engineering departments, and 54,000 square feet will be added to that now used by the equipment and body divisions. The work is to be begun at once and hurried to completion.

TRUCKS AS ESSENTIAL FOR TEXTILE INDUSTRY AS EQUIPMENT OF PLANTS



The Packard Five-Ton Tank Truck and 3 1/2-Ton Platform Truck in the Service of the Alsace Worsted Co., Woonsocket, R. I.

to make Providence at any cost.

To Providence in Three Days.

Each plant furnished 50 men and two Packards. The trucks went on until stalled and then the men got off and began to dig. The first day was the toughest and the four trucks and 100-man power only reached the Hill Crest, Cumberland, by night fall. All returned to Woonsocket and began the next day where they had left off the night before. It took three days to travel the 16 miles, but all engaged in the work had the satisfaction of knowing that they were the pioneers in breaking the trail through the snow blocked fastnesses of Northern Rhode Island after the worst storm a half century had hurled at mankind. Thereafter the Packards made regular trips between the cities.

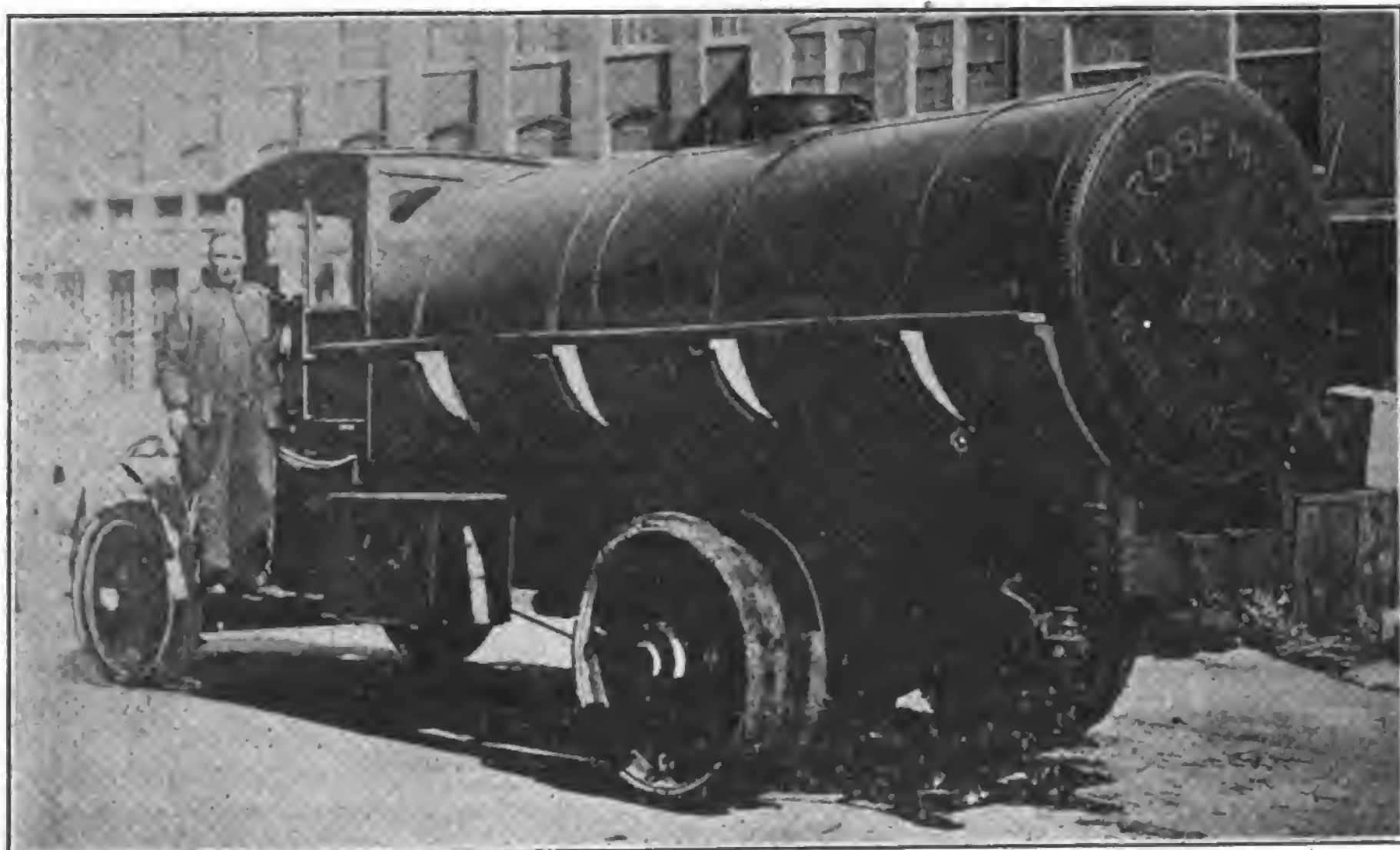
The Alsace and the Rosemont mills each have a 5 1/2 and a 3 1/2-ton Packard. On the two large chassis are mounted 1500-gallon tanks.

EVEN a blizzard of the 1920 variety did not prevent the continuous use of the four Packard trucks in the service of the Alsace Worsted Co. and the Rosemont Dyeing Co., Woonsocket, R. I., these trucks being the first to fight their way from Woonsocket to Providence for much needed fuel oil and raw material after the storm of early February, which tied up traffic the country over. The fact that these two mills did not suspend operations was due entirely to the work done with these vehicles.

Less than a week after the big storm, at which time no vehicle of any kind had been able to plough through to Providence, the two concerns mentioned were hard put for fuel oil, which is used for heating the plants. Theophile Guerin, president and manager of the Alsace, also has capital invested in the Rosemont, of which John G. Mason is president and manager. The two factory heads discussed the problem and decided



The Garage of the Alsace Worsted Co., Woonsocket, R. I., Showing Trucks Identical with Those of the Rosemont Dyeing Co. of That City.



The Packard Five-Ton Tank Truck Used for Transporting Fuel Oil from Providence, Making Two Trips a Day with 1500 Gallons.

It was not until 1918 that these concerns realized the economy of truck service. Today they say: "We couldn't get along without them." The officials point out the saving of time and labor through the reduction in the number of loading and unloading processes, the lessened handling on both ends, as well as by the railroads, the fact that special crating is no longer required and that the product is not on the road for 10 days or two weeks when it is badly needed in the mill. Neither the money invested in the product nor in the cost of haulage is tied up for any length of time.

To Maine Twice a Week.

The 3 1/2-ton trucks are used mostly on long trips, while the bigger machines are employed much of the time in hauling oil from Providence. Two round trips a day are made for oil by the tank trucks as a rule, the day's haulage by each totaling 64 miles.

When the Rosemont and Alsace companies decided to install the fuel oil heat-

ing systems they at once realized that the railroads could not handle this product so that a steady supply could be guaranteed. It was then decided to secure the trucks, a decision for which both companies have been thankful many times since.

The Rosemont Dyeing Co. runs a 3½-ton truck twice a week to Sanford, Me., which is 160 miles from Woonsocket. This truck gets to Sanford in a day and is back in Woonsocket the next evening. The start from Woonsocket is usually made at 3 a. m. and under normal conditions Sanford is reached at 5 p. m. Two drivers are used. The only stops taken are for lunch and gasoline. The route followed is through Boston, Salem, Lynn, Ipswich, Newburyport pike, Newburyport, Hampton Beach, Portsmouth, the toll bridge, Kittery, York beach, Wells, Wells depot and Sanford.

Off at 3 in the Morning.

The truck leaves Sanford at 3 the following morning and is due back in Woonsocket at 5 in the afternoon. The start from Woonsocket is on Monday morning and the return Tuesday night. Wednesday morning the truck is groomed and is used in the afternoon for local hauls. Thursday and Friday it is taken for the second round trip of the week to Sanford and on Saturday the truck again does local duty. The Sanford trips were recently resumed, they being usually omitted during the severest part of the winter, December to March.

The Maine trips are taken to bring to Woonsocket mohair tops from the Goodall Worsted Co. of Sanford. This cloth is put through the Vigoreux printing process at the Rosemont plant and then returned to Sanford, where it is spun, woven and finished. The completed products are Palm Beach suitings and mohair linings.

Woonsocket is now the largest center in the world for custom dye trade in men's wear, as it is also the largest for French spun yarns.

Another 3½-ton truck is used on runs to Holyoke, Worcester and Fall River. These trips are made to bring mohair and wool tops to be put through the printing processes, after which they are returned. Little local hauling is done, the trucks being on the road the greater portion of the time.

WORKERS FROM TANK CORPS.

The Buda Co. of Harvey, Ill., recently informed officials of the War Department that it would be glad to employ honorably discharged army men who had seen service in the Tank Corps. These soldiers are given a thorough training along technical lines and are qualified mechanics. Uncle Sam now conducts the largest technical school in the world.

BIGGER TRAFFIC DEPARTMENT.

The Traffic Department of the National Automobile Chamber of Commerce has proven of such value to the members that its activities are to be enlarged. The expansion will affect both the New York and Detroit offices.

Farm Animal Census Shows Decrease of Horses

Washington, D. C., Feb. 12.—Horses in this country reached their maximum in 1918 and since then have been gradually decreasing, according to data compiled by the Bureau of Crop Estimates, United States Department of Agriculture. While this statement applies to the United States as a whole, the information secured by the bureau relates primarily to the supply of horses on farms and ranches, the gradual decrease of which is attributed to motor vehicles. That the decline of the horse on farms is not due merely to the use of passenger automobiles is indicated by a survey recently undertaken by approximately 36,000 crop reporters representing the bureau in all sections of the country. They have reported the names of more than 49,000 farmers who use motor trucks on their farms. But the extent to which these trucks displace horses is problematical. In many cases the introduction of a truck on a farm indicates provision for increased hauling rather than an actual reduction in the number of horses used.

The estimated number of horses on farms and ranches Jan. 1 of this year was 21,109,000, a decrease of 373,000 head, or 1.7 per cent. compared with a year ago. The total value of these animals this year is estimated at \$1,992,542,000, as against \$2,114,897,000 last year. This means an average value per head for horses of all ages of \$94.39, compared with \$98.45 a year ago. The average value per head 10 years ago was \$108.03. From these figures it is not difficult to understand why the horse market is regarded as unsettled and the future equally uncertain. The best demand during the past year has been in the South, while decreases have occurred on the western ranges. During the past two years the increased demand for feed for high priced meat animals has made it relatively more costly to keep a horse on the farm.

Comments in the reports of field agents to the Bureau of Crop Estimates throw interesting light on the decrease in the number of horses. The agent in South Dakota writes: "With the competition of the gas tractor there has been a diminishing demand for the horses of the class largely grown in this state." The agent in Tennessee states: "The raising of horses and mules has declined to some extent in the past few years. The auto is taking the place of the horse in many instances. With the mule the decline is not so marked, as he is the main stay of the farm, though a few mules are being replaced by the tractor."

According to the field agent in New Mexico there are no longer any wild horses on the range in his state and the number of small Mexican cow ponies is rapidly diminishing. The field agent in Utah states that horses are liabilities rather than assets in his section. Speaking of the decrease in certain sections of

Washington, the local representative in that state says: "Where a notable reduction has occurred in any county it seems due to replacement of horsepower by motor power."

While the number and value of horses has declined there has been a slight increase in the number of mules in this country compared with a year ago. Most of these animals are in the southern states and the prosperity of that section is reflected in the increased demand and high prices paid for mules. The average value per head is \$147.10 (all ages included), compared with \$135.83 a year ago and \$120.20 10 years ago. The total number of mules on farms and ranches the first of this year was 4,995,000, an increase of 41,000 head, or 0.8 per cent.

AUTOMOTIVE INDUSTRY ENJOYS BOOM IN CANADA.

The farmer is now the biggest and wealthiest purchasing agent in Canada, which should mean a lot to the American tractor and truck industry. Rural residents are buying automobiles by thousands.

Extensive road building is now under way in Ontario, which should mean an increase in rural business at such points as Kingston, Ottawa, Ontario, Toronto and Hamilton. American firms should have an agent in that province.

A questionnaire recently showed that farmers in Ontario travel an average of 34 miles in their cars to buy merchandise. Only 25 per cent. of the men and 23 per cent. of the women buy their clothing in the home village.

MOTOR-HAULING CLEARING HOUSE A BIG SUCCESS.

The establishment of a motor-haulage clearing house in Liverpool has been attended with such success that similar clearing houses have been established at many other points, thus securing co-operation for return loads. Every lorry applying at the Liverpool clearing house has been given a return load to its own town or a town en route. In December a return load was arranged for every lorry taking an outward load from Liverpool. Thousands of tons of goods have been transported through this means to all parts of the country.

TRUCK WEIGHT LIMITED.

The New York Senate has passed the bill of Senator Mortimer Y. Ferris of Essex limiting the combined weight of motor truck and load to 25,000 pounds. The act also requires that trucks shall not be more than eight feet in width nor more than 12½ feet in height.

CHANGE TIRE IN 30 SECONDS.

Samuel A. Wallace, distributor of Ford vehicles in London, and mechanical transport director in that city, recently made the prediction that the day is not far off when a tire change will be a matter of 30 seconds.

TRAILER INDUSTRY'S CAMPAIGN AGAINST ADVERSE LEGISLATION

NOW that trailers are coming into more common use with motor trucks and all indications point to a rapid increase in their numbers, the question of how their use will affect the improved highways is of interest to highway authorities and the general public.

The trailer has been and still is looked at somewhat askance and with a feeling that the towing of trailers by motor trucks increases the burden on the highways and somehow increases the menace to other users of the roads. The authorities are therefore inclined to throw legal safeguards around the use of trailers for the protection of highways on the improvement of which hundreds of millions of dollars are being spent annually. This is good public policy and meets with the approval of the manufacturers and users of trailers as well as of the general public; in fact, the trailer manufacturers themselves are urging the enactment of suitable legislation to control the use of trailers, just as the automobile and truck manufacturers and dealers advocate proper and reasonable laws for the regulation of motor vehicles.

No one realizes the importance of good roads better than the manufacturers, dealers and users of motor trucks and trailers. The whole future of these interests is bound up with the highway situation, because hard surfaced, durable highways are essential to the successful and economical use of trucks and trailers. Furthermore, a very large percentage of the cost of maintaining the highways is paid from the heavy license fees imposed on motor vehicles and the users of these have no desire to wear the roads rapidly and see these fees increased to pay for such wear.

Mainly a Matter of Economics.

The whole subject of suiting the highways and the traffic that uses them to each other is a particularly difficult one and there are bound to be differences of opinion as to how this should be done. It can be done only by acquiring a full knowledge of all conditions and factors, so it is necessary that the highway departments and legislators and the motor vehicle interests should get together and learn each others' problems. They can then arrive at a fair and proper solution which will result in providing the most economical system of highway transportation for persons and property.

It is largely a matter of economics, the question being whether it is cheaper in the long run to provide suitable roads for motor vehicle traffic or to prevent further reduction in the cost of haulage by unduly restricting such traffic. A fair balance can be struck somewhere between the cost of highway construction and maintenance and the cost of operating motor vehicles. If too little money is spent on the roads the consumption of gasoline, the wear and tear on vehicles and tires and the loss of time by machines and drivers become excessive. On

the other hand, if relatively few excessively heavy vehicles operated at high speed quickly wear costly roads, the temporary saving in operating costs is more than offset by the expense of repairing the highways.

The trailer, more than any other road vehicle, requires good, level roads for successful and economical service. For this reason the trailer interests favor reasonable restrictions on the size, weight and speed of trucks and trailers and do not object to fair registration fees for trailers provided the fees go into a fund for highway work. As a matter of equity, however, they believe that all vehicles using the highways should pay similar fees corresponding to the use made of the roads and the relative wear and tear done to them.

Trailers Reduce Hauling Cost.

It is coming to be pretty generally recognized that under good road conditions the use of one or more trailers with a motor truck reduces the cost of haulage by 20 to 40 per cent., according to the particular service and method of use. The capacity of the truck is doubled and sometimes tripled by hauling a trailer or semi-trailer. Even greater economy is obtained occasionally by hauling a train of two or three trailers. A number of municipalities in New York and other states are using fleets of trailers for the most economical disposal of ashes and garbage. In some cities the trailers are drawn through the streets by teams for house-to-house collection and then driven to a central point where three or four are coupled in a train and drawn by a motor truck several miles out of the city to a dump. The trailers have steel side-dump bodies, which are carried in a drop frame so that the sides of the body are only shoulder high. This makes loading easy and saves much time of the ash and garbage men. In Utica, N. Y., three such trailers of five tons capacity are hauled four miles out of town by a five-ton truck. Part of the route is up a curved hill with nearly a 10 per cent. grade over a cinder road.

Trailer Trains Not Dangerous.

This same system would probably be adopted by Newark and some of the other cities in northern New Jersey if the state law did not unwisely prohibit the towing of more than one trailer or semi-trailer. This provision was probably included in the law from a mistaken idea that a string of two or three trailers behind a motor truck would obstruct turns in the highway and endanger other traffic. But this is not true. As trailers are designed and built today the wheels of all the trailers in a train follow in the tracks of the towing vehicle and will readily turn a right angle corner without crowding the inside of the turn and preventing the passing in perfect safety of a vehicle coming from the opposite direction or from behind. Such trains necessarily proceed at slow speed and

the trailers do not sway or "weave" from side to side with danger of striking another vehicle. Trailer engineers have worked earnestly during the last few years and have almost entirely overcome this tendency even when the trailers are run at high speed.

Commercial houses and industrial companies seldom use more than one trailer or semi-trailer with a truck, although under favorable conditions two trailers will further lower their hauling costs. As they become more familiar with the use of trailers it is probable that on long hauls, outside of congested cities, this practice will increase.

Instead of adding to traffic congestion, the use of trailers will lessen it, because a truck and close-coupled trailer or semi-trailer constitute a transportation unit and by hauling a double or triple load, cut down the number of units on the road. This will be realized readily if one imagines all the cars in a railroad train being run as separate units with considerable space between, instead of coupled together in a single train and the danger and confusion that would result, particularly at grade crossings.

Weight Distributed on More Wheels.

Highway engineers hold that the gross weight of big trucks with their loads is the most destructive agent to improved roads and have often asked truck manufacturers to indicate the probable development as regards truck sizes so they would have a definite weight as a basis for calculating the supporting strength of roads and bridges. In response the manufacturers have agreed to a total gross weight limitation of 28,000 pounds for a single vehicle with its load. This will permit the operation of trucks of seven tons capacity and the manufacturers are not building trucks of larger size for use on public roads outside of large cities. As a matter of fact a seven-ton load can be hauled at less cost on a 3½-ton truck and 3½-ton trailer or semi-trailer than on a single seven-ton truck, and a load of five tons can be hauled more cheaply on a 2½-ton truck and trailer than on a five-ton truck under most conditions.

Such division of the load has a number of important advantages. Most big trucks are operated the major part of the time with only partial loads, but with a trailer, the truck can be used alone for small loads and the trailer coupled on when the larger load is to be hauled; with a trailer two loads of different materials can be hauled at the same time, or two loads to different delivery points can be hauled and the trailer left for unloading at the nearer point and picked up by the truck on its return from the further point; the tendency to overload the truck is avoided when the excess can be placed on a trailer; waiting time of the truck and driver is saved, as truck and trailer can be loaded or unloaded at different places at the same time.

Tendency to Use Smaller Trucks.

Owing to the foregoing advantages the use of trailers has a tendency to increase the demand for moderate sized trucks in preference to the larger sizes for ordinary haulage work. In certain lines of manufacturing and for special haulage jobs it is either necessary or most economical to haul single loads of 10, 15 or more tons. The semi-trailer or pole trailers are best suited to these purposes. When they are used the weight of the load is divided between the truck and trailer so there is no greater weight on any pair of wheels than where only half as heavy a load is carried on a single motor truck.

Viewed from the Road Standpoint.

Distribution of the weight over three or four axles instead of concentrating it on two axles is of particular importance from the road engineer's point of view and is the strongest factor in favor of the trailer. Where a heavy load is carried on a semi-trailer or trailer the gross weight is supported on six or eight wheels and is distributed over a wheel-base of 15 to 30 feet instead of about 12 feet. Moreover, the combined weight of a truck and trailer is considerably less than the weight of a truck alone of corresponding capacity. Thus a seven-ton truck weighs about 14,000 pounds while a $3\frac{1}{2}$ -ton truck weighs about 7500 pounds and a $3\frac{1}{2}$ -ton four-wheel trailer about 3500, or a total of 11,000 for the two. So the use of a trailer actually reduces the total gross weight on the road, besides distributing it more evenly.

It is further to be considered that the weight of the trailer and its load is carried on free rolling wheels; that is the trailer wheels do not deliver any driving effort to the road surface tending to disintegrate it, the only effect being to roll the surface.

Should Encourage Use of Trailers.

All of these facts furnish the ground for the claim made by trailer manufacturers that legislation should be of a character to encourage rather than to discourage the use of trailers and that registration fees for trailers should be less than for motor trucks of equal carrying capacity. In this claim they are supported by the national associations of automobile and truck manufacturers, dealers and users.

There are three or four states in the Union that prohibit the use of more than one trailer or semi-trailer with a motor truck and an equal number that forbid the operation of motor driven vehicles equipped with metal tires. New Jersey does both, while Vermont (a mountainous state) permits hauling only one trailer and Michigan and Wisconsin require rubber tires. Such legislation was enacted in all sincerity, but without full knowledge of how trailers are used. More recent legislation in Illinois, Michigan and Massachusetts permits the operation of trailer trains 60 or 65 feet in length, which is sufficient for a truck and two trailers. Trailer manufacturers believe the allowable length should be 85 feet, permitting the drawing of three trailers.

All trailers for ordinary commercial

purposes are regularly equipped with rubber tires, either solid or pneumatic, except a few very light two-wheel trailers of a few hundred pounds carrying capacity built by carriage makers to be towed behind light passenger automobiles. And all trailer and motor vehicle interests agree that vehicles operated at speeds of more than six miles an hour over improved highways should have rubber tires.

Steel-Tired Road Building Trailers.

But in framing state-wide laws to protect improved roads, the legislatures in these few states have overlooked or been unaware of certain uses to which trailers are put and it is now seen that the laws designed to save the public money for road work may actually prevent the saving of road funds. A certain type of trailer is much used for road construction and repair work by contractors. These are slow-speed vehicles with dump bodies and are hauled in trains of two to half a dozen or even more by motor trucks, traction engines or tracklaying tractors. They are fitted with broad, flat steel tires and are operated at a speed of three or four miles an hour. They are used almost entirely on roads under construction or worn out roads undergoing reconstruction or repair. In some remote mining, lumbering or farming sections of the country they are used for heavy haulage where there are no expensively surfaced highways. Each trailer is of about five tons capacity, so that about 30 tons of road material, ore, lumber or grain can be hauled in a single train by a powerful tractor. This, therefore, affords the cheapest method of road haulage and a contractor who can use such equipment can make the lowest bid on a job of road construction. But if the state law forbids metal tires the use of more than one trailer with a truck and the operation of tracklaying tractors on all public roads, whether hard surfaced or not, the state highway commission cannot get the benefit of such low bids by contractors and must pay a higher cost for road building.

State authorities concerned in framing motor vehicle and traffic laws should bear facts such as the foregoing in mind when drafting bills and invite the cooperation of men who have made a special study of highway traffic.

MITCHELL, S. D., AUTOMOTIVE TRADE ASSOCIATION.

The tractor dealers in Mitchell, S. D., who all afford service for the machines they sell, have joined with passenger car and truck and accessory dealers in the organization of a trade association, and a committee is now drafting a constitution and bylaws.

24-HOUR SERVICE FOR TRUCKS.

Russell P. Taber, Inc., distributor of Republic, Reo and Duplex trucks in Hartford, Conn., has inaugurated a 24-hour service plan in order to provide the best possible service for truck users of that territory.

GRAND RAPIDS SHOW SCORES.

The commercial vehicle show held at Grand Rapids, Mich., early this month was a business event from every standpoint. Substantial business men ready to dig down and buy on the spot made up a large part of the attendance. Many orders were placed and valuable prospects obtained. The gathering included visitors from all parts of Western Michigan.

As an exhibit the show was also a big success, many cars being shown in handsome surroundings. There was every indication that this section of the United States knows that this is the day of the truck.

TROLLEY COMPANY MAY OPERATE MOTOR BUS LINE.

The Rhode Island Co., which now operates practically all the trolley lines in that state under a receivership, is likely to run motor buses of its own when its affairs are finally straightened out, according to plans now being considered by Governor Beeckman and the Legislature. At least the company will be given the right to compete with the bus and jitney lines, if it so desires. The plan also calls for all these transportation lines being placed under the jurisdiction of the public utilities commission.

CHANGES IN ROUTINGS FOR RELIABILITY RUN.

Charles P. Root, general manager of the First National Motor Truck Reliability Contest, to be run out of Omaha, Neb., has made several changes in the routings to make possible night and noon stops at larger cities. This action followed an inspection of the route. Entries will close in Omaha May 1. The trucks must be in the hands of the technical committee at Omaha, May 21, and the run is to start about May 31.

PACKARD 'BUS SERVICE FOR SCRANTON, PA.

A company has been organized which will operate a public passenger service in Scranton, Pa., and it has purchased five Packard chassis equipped with 'bus bodies with which the service will be inaugurated upon delivery. The company will charge a fare of five cents. If the company is well patronized the number of machines will be increased.

GMC TRUCK SERVICE.

The Lansing-Buick Co., Lansing, Mich., which is handling the GMC truck, is occupying its new home, 421 South Capitol avenue, and is now fully equipped to provide its customers with prompt and efficient service.

TRUCKS ON VANCOUVER ISLAND.

There are 200 trucks and nearly 5000 passenger automobiles on Vancouver Island, British Columbia. Practically all are of American manufacture.

NATION AND STATE ROAD PROJECTS

TRUCK INDUSTRY IS BEHIND NATIONAL HIGHWAY ACT.

As definite action looms up in Congress on Senator Townsend's National Highway Act, behind which every truck manufacturer, dealer and owner in the land should have his shoulder, belated objections appear from remote points on the part of highway officials who have not had time to study the measure, do not know what it is all about, and yet may do such harm that every friend of the bill should stand up and be counted.

To combat unfounded statements to the effect that the act proposes to take over all highway work as a Federal function, that the continuation of Federal aid will be jeopardized and even that state highway departments will be eliminated, Senator Townsend announces that not only does the measure not supersede the Federal aid plan, but extends it.

It even goes further in solving highway problems in the various states by taking over the construction and maintenance of such routes in each state as may be designated as links in a national system. The percentage of national system in each state will be about one per cent. of the highway mileage, so that the various state highway departments will still have 99 per cent. of their roads to wrestle with.

The act is now in the hands of the Senate committee on postoffices and post roads, of which Senator Townsend is chairman. It provides for the creation of a Federal Highway Commission to take over from the Department of Agriculture the highway work now being conducted as a branch of that department. It is urged that a new department is necessary to care for the highway affairs of the nation because of the coast-to-coast clamor for increased transportation facilities. Civic and commercial organizations throughout the country have been practically unanimous in indorsing the act.

THE TOWNSEND BILL.

E. T. Herbig, general sales manager of the Service Motor Truck Co., addressed the division sales managers at a recent meeting at Wabash, Ind., in behalf of the Townsend measure, providing for two main highways in each state connecting with those of adjoining states. Mr. Herbig pointed out that more than one-half the money now spent for highways goes for dirt, gravel, sand and clay roads, which can hardly be classed as permanent.

TO LIMIT TRUCK WEIGHT.

The Commissioner of Public Works in Providence has asked for an amendment to the ordinance limiting the weight of vehicles allowed to use the highways. The present ordinance was framed when none foresaw the large trucks of today.

EDUCATIONAL PART OF HIGHWAY DEVELOPMENT A SUCCESS.

From all sections of the country come reports to the Federal Highway Council at Washington that state, county, city and town officials are heeding public clamor and riding roughshod over such handicaps against expansive road building as high costs of labor and materials. A definite policy of the highway development is being everywhere undertaken.

A glaring fact in the situation is that the greatest highway construction problem today is the evil which good roads are designed to remove, lack of transportation. This is particularly true in the production of materials.

More and more the educational part of highway development is extending its scope and the Federal Highway Council is the national body around which this activity is now being centralized. The direction of highway educational work along broad lines is an outgrowth of the public's determination to get roads built upon a comprehensive scale, economically and with the type best suited to each locality and adapted to traffic needs. The council has direct affiliation with 1100 organizations throughout the country representing the public welfare and commercial interests of millions.

TO ASK \$50,000,000 FOR GOOD ROADS IN LOUISIANA.

A bond issue of from \$25,000,000 to \$50,000,000 is to be asked of the general assembly at its next session for the construction and maintenance of a system of good roads throughout Louisiana, and the Louisiana Motor League has already launched an intensive campaign to put over the project. While several national highways reach Louisiana the state roads do not connect with them and it is to remedy this condition that the fight is on.

Santley Lemaiare, an executive of the league, is now on a motor tour of 7143 miles, during which he will travel every road in each of the 63 parishes. It will require six months to complete the tour.

GOOD ROADS IN WISCONSIN.

The annual meeting of the Good Roads Association of Wisconsin was held recently at Milwaukee, in conjunction with the yearly "good roads school" conducted by the Wisconsin State Highway Commission for county highway commissioners and their assistants. The association elected the following officers: President, C. C. Jacobus, member of the Milwaukee county board of supervisors; vice president, Elmer S. Hall, Green Bay; treasurer, E. J. Perry, Fond Du Lac; secretary, William H. Reese, sales manager of the Sterling Motor Truck Co., Milwaukee; executive secretary and manager, Francis A. Cannon.

NATIONAL TRUCK HIGHWAYS SYSTEM PROPOSED.

A national system of motor truck highways under the direction of a special department to be known as the Department of Highways is proposed by Congressman Raker in a bill presented in the lower house of Congress. The same official has also offered an act calling for military highways as part of a national system of motor truck defense, in Washington, Oregon and California.

The former measure would ally motor truck highways with the general national highway system already authorized through a bill introduced by the same member of Congress. Although the work of construction and maintenance shall be done under the direction of the state highway authorities the national government would pay the bills.

The president would appoint a secretary of the department and 10 National Highway Commissioners, representing agriculture, commerce, manufacture, motor truck transport, military engineering, education and economics, development of native resources and motor car travel and touring. The nation would be divided into 10 regional highway areas. The sum of \$10,000,000 would be appropriated to carry out the project.

The act providing for military highways would establish three motor transport truck lines, the Coast Highway, or first line of defense; the Valley Highway, or second line of defense; the Mountain Highway, or third line of defense. The Coast Highway would extend from Port Angeles, Wash., to San Diego, Cal.; the Valley Highway from Blaine, Wash., to Calexico, Mex., and the Mountain Highway from Oroville, Wash., to Eureka, Cal., where it would connect with the Coast Highway. The sum of \$250,000 is asked for the purpose of making a survey and report by the War Department.

\$25,000,000 FOR GOOD ROADS IN 16 SOUTHERN STATES.

Nearly \$25,000,000 will be spent for good roads in the 16 southern states this spring. This calls for the construction or improvement of 2671 miles of highways. Other road projects have been agreed upon between the Federal and state governments not included in this total. Texas leads with 607 miles at an expenditure of \$3,508,278, and Georgia comes next with 307 at a cost of \$1,725,798.

BETTER ROADS IN JAPAN.

Road construction in Japan is due to take great strides within the next few years and, as the Japanese are fully aware of the advantages of motor transport, it will not be long before this country offers a prosperous market for American trucks.

DUPLEX LIMITED MAKES HIT AS SPEED TRUCK.

The Duplex Four-Wheel Drive was the greatest boomer for the Duplex Limited, the latest output of the Duplex Truck Co., according to President Harry H. Lee, who states that orders for the new truck, the first announcement of which was made in January, have already equalled the season's capacity. Men who had used the Four-Wheel Drive were so impressed by Duplex design and manufacture that they ordered the new truck on that basis alone.

The Duplex Limited is a speed truck especially designed for pneumatic tires, with an engine to run at a speed of 25 miles an hour, and with axles, springs and other parts designed for these conditions. Loads of from 3000 to 5000 pounds, including cab and body, are carried safely and economically at this speed.

PACKARD TRUCK FOR THE ISLAND OF GUAM.

The Pittsburgh-Des Moines Bridge Co., which has a contract for work on the Island of Guam, which is under the administration of a naval officer, it being a United States possession, has a 4½-ton Packard truck shipped from the factory recently, which will eventually be delivered there. Guam is 30 miles long and six miles wide and is 6230 miles west of San Francisco. The nearest service stations are at Honolulu and Japan. The use of the truck will depend in large measure upon the mechanical experience of the contractor's organization.

A SENATOR ON ITS STAFF.

The Acme Angles, the magazine published monthly by the Acme Motor Truck Co., Cadillac, Mich., has a distinguished contributor to its March issue in the person of Senator Charles E. Townsend of Michigan, who writes a weighty article on "Why I Am Working for a National System of Highways." He declares that such a system would result in greater material benefit to the country than any other project now proposed.

Other special articles of merit, the usual clever cartoons and other features, make the March issue of Acme Angles worth while.

WHITE CO. INCREASES WORKERS' BENEFITS.

The White Co., Cleveland, is the second largest industry of the city. Its workers maintain a mutual benefit association that dispenses stated amounts to members who may be ill and to families in the event of the death of a member. So great was the drain upon the treasury of the association from the prevalence of influenza that the company has made regular contribution to the fund raised by weekly assessments, and has voluntarily begun payment of \$250, the same amount as is paid by the association, to the families of deceased workers.

THE MOTOR TRUCK

Cleveland Exceeds Detroit in Auto Production

Cleveland claims rank as the first automobile city of the world, generously granting second place to Detroit.

The Ohio city is not satisfied to let well enough alone, however, and is preparing for tremendous expansion. Mayor Harry L. Davis is in step with the movement to keep the place in auto manufacturing which the city holds and is constantly conferring with financial and automobile men interested in the development of additional plants in the automotive industry.

Cleveland admits that Detroit leads in actual car output, but does not hesitate to mention the fact that lower priced cars constitute the bulk of that city's production. Cleveland will produce parts this year for most of the automobiles made and assembled in America. More than 100,000 completed cars will be turned out, in addition to thousands of frames, motors, bodies, axles and tops.

The creation of new companies and the expansion of old concerns will steadily increase the production of automobiles and trucks, while new plants for the making of parts are being established almost daily. Municipal authorities are aiding in securing sites for new factories and to provide housing accommodations for the thousands of additional workers who will come to Cleveland in the next few years. From both a manufacturing and a distribution standpoint Cleveland has ideal advantages.

Cleveland will be made better known as the home of the Winton, Peerless, Stearns, Chandler, Grant, Jordan, Tempel, Marsh and other cars, and of the White truck this year through national advertising campaigns.

Among the concerns putting up new plants or additions, or planning to do so, are the Fisher Body Corporation, which will build in that city the largest factory in the world engaged in turning out automobile bodies, employing 7000 hands. The Cleveland Automobile Co., which ex-

pects to market 10,000 medium priced cars this year, and the Eaton Axle Co., which is already assured of a demand for the capacity output of its big new plant.

SPECIAL TRUCK BODY FOR BRICK DELIVERY.

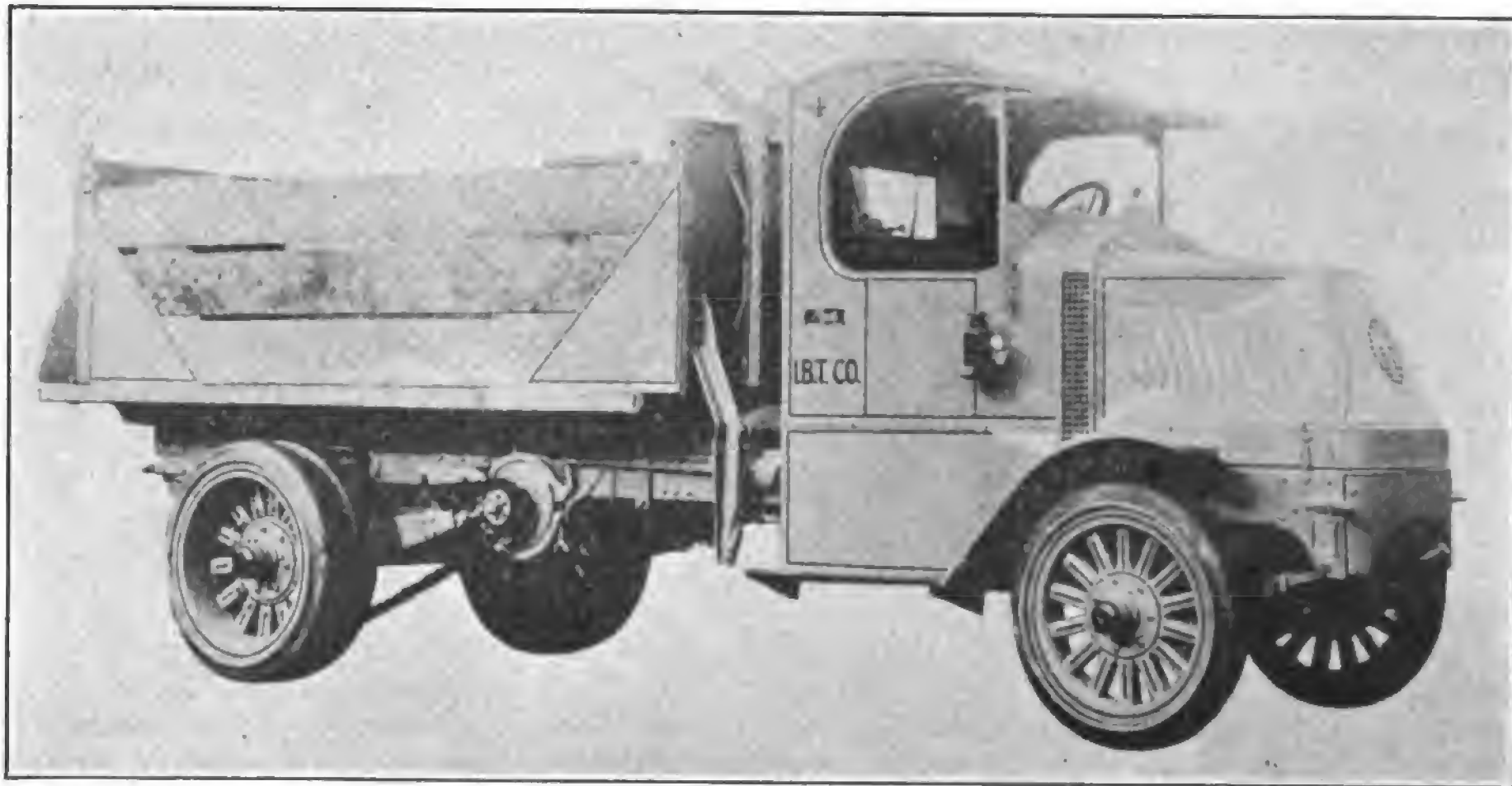
Adaptation of truck bodies for specific work requires careful study of conditions in which a work is to be done. The experienced body builder will determine the operating factors and will design what will practically serve with economies of time and labor, and in many instances the utility of the machine for general work will be equally good.

Hauling brick from railroad cars or kilns to jobs could seemingly be done with practically any type of body, but the Illinois Brick Teaming Co. of Chicago had to meet a peculiar condition, for the contractors insisted on precise packing of loads for the reason that this saved a count of the brick. That is, with a given number in a row by count of the rows the total number of the load could be arrived at with practically no probability of error.

The type of body that would best serve was studied and a Mack AC dump truck was equipped with specially built removable side boards. With this the brick can be loaded from either side by taking off the side boards and walking from the brick car into the truck body. The body has capacity for 4000 brick, which will weigh approximately eight tons, to a load. The average trip consists of a two-mile run and dumping the load at the job. This truck is hauling an average of 28,000 brick a day, or about 56 tons.

700 IN MOTOR TRUCK CLUB.

The Motor Truck Club of New Jersey, already boasting of a membership beyond the 700 mark, recently elected officers as follows: President, John F. Winchester; vice president, Charles T. Kavanagh; treasurer, David Harper; trustees for three years, David Baird, Jr., and George Sebold.



Special Type of Body Built to Show Count of Brick in Load in Service of the Illinois Brick Teaming Co. of Chicago.

FARM-TO-CONSUMER SALES BY PARCEL POST AND RURAL EXPRESS SERVICE

RAPID and comparatively inexpensive transportation is available for every farmer served by the rural delivery service of the Postoffice department. The possibilities of this service are seemingly almost unlimited, and yet but a small part of the farmers and very few of the residents of cities avail themselves of it. There can be but one reason for this, and that is the failure of the people as a whole to establish business relations that can be carried on by this service. This fact being understood the solution is, apparently, systematic development of markets by the farmers and dependable sources of supply by the consumers.

Here is the condition that cannot be materially changed by the individual, that is, so far as developing the rural delivery service is concerned. Practical results can only be realized by what may be regarded as cooperative use of the service by all who have products to dispose of, and by those who want to obtain these products at prices that are not more, and ought to be somewhat less, than are paid in the local markets.

Even casual study ought to convince the observer that this will necessitate changes in the methods of buying and selling. These changes are not radical and they are entirely practical. They are by no means inconveniencing. During the past five years the people have been compelled to adapt themselves to conditions that might be regarded as intolerable if they had been proposed for the benefit of the general public, yet, while accepted under pressure of circumstances, they were found to be far from burdensome. The people believed the changes would inconvenience them, and they were generally surprised to learn from experience their worlds functioned quite as well as before; in some instances even far more satisfactorily.

The people must realize that the rural deliv-

ery service is not operated as a private enterprise. Any concern engaging in business must earn sufficient revenue to pay all operating costs and return a fair profit on the capital invested. Rural delivery is afforded by the government to better serve the people living outside of towns and cities, which was primarily intended to distribute and collect mail. Then the service was amplified to include the distribution of whatever might be conveniently handled by the carrier, with limits as to weight and bulk, under the classification of parcel post.

The possibilities of the service with reference to capacity collection and distribution have been neglected by the people. There are nearly 50,000 rural delivery routes operated by the Postoffice department, more than 35,000 of these from what are fourth class postoffices, and the average route is from 22 to 26 miles. The parcel post packages carried by these routes, which are under the supervision of the division operated by the Fourth Assistant Postmaster General, who is now James I. Blakslee, will average eight out and one in to a trip, which is obviously very much less than the maximum number that might be carried at practically no greater expense.

Revenue Could Be Greatly Increased.

By this is meant that the revenue to the government might be immeasurably increased for comparatively little additional cost. The carriers cover prescribed routes, they are paid stated salaries with allowances for vehicles they own, or they are supplied transportation. If the minimum volume of mail required to establish a route is received at an office a petition from rural residents is

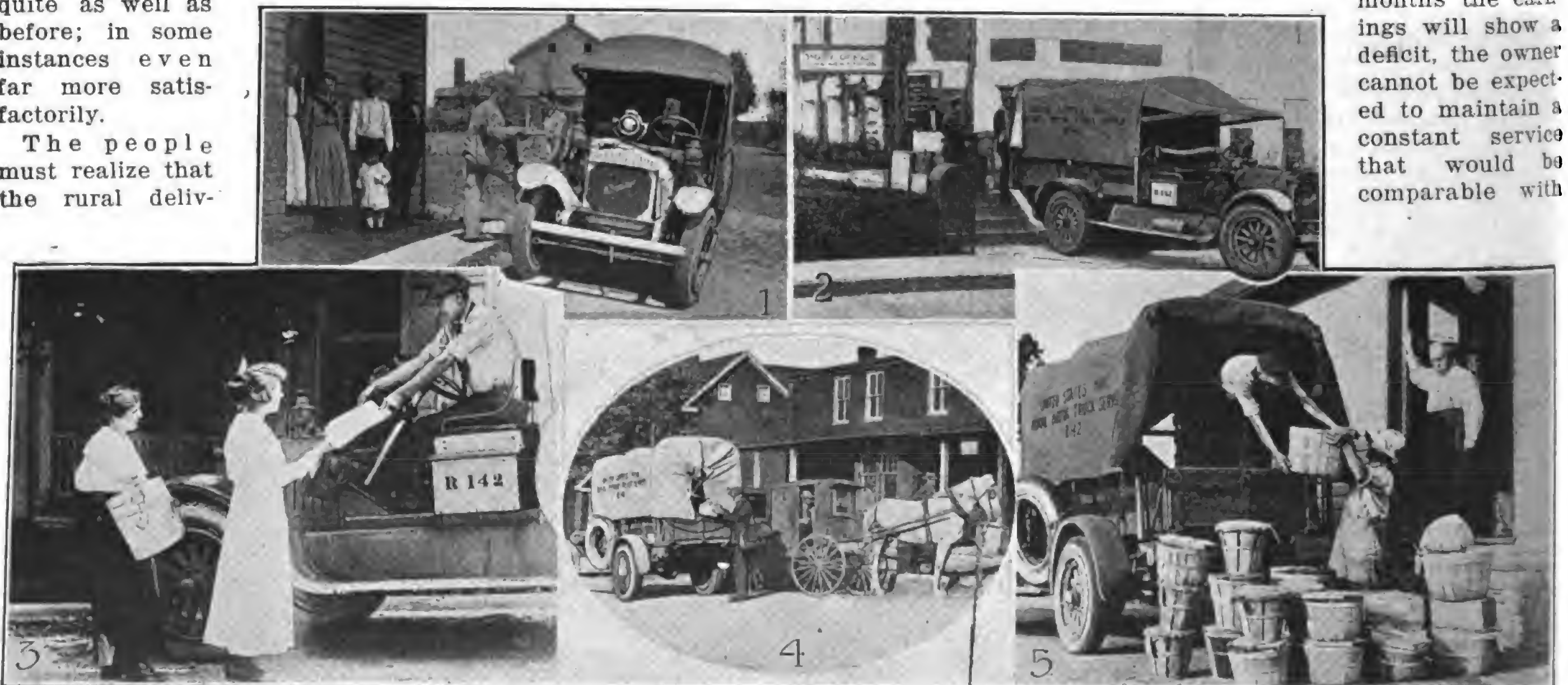
usually sufficient to insure an order authorizing the service. But if every rural carrier distributed and collected all his vehicle could carry each daily trip the handling at the postoffices from which it is operated would be the only added cost.

A very large part of these rural routes do not earn anything like the expense of operating them. The deficit is charged to department expense. Were each route operated for profit a comparatively small number would be found self-sustaining. The people do not complain of this direct loss, but nevertheless they pay for it. If they were to avail themselves of the service now operated by establishing trade relations with those served by the carriers, they would to a considerable extent lessen the number of middlemen and correspondingly reduce the cost of products that are necessary, for practically all farmers raise what is food or food material after processing.

Mail Service Must Be Maintained.

There is another aspect of this to be considered. The Postoffice department must maintain its carrier service the year through. During the spring, summer and autumn the farm products must be moved from the farm to the market and the volume will increase until it is maximum and then decrease until late in the autumn it is at its low level, which may be said to continue through the winter and early spring. The revenue from whatever can be transported by the carriers is obviously so much clear gain.

Contrast this with a privately owned and operated rural express route that must obtain rates that will insure profit to the owners. If, for instance, there is a large volume to haul three or four months of the year, and during the other months the earnings will show a deficit, the owner cannot be expected to maintain a constant service that would be comparable with



1, Mailing a Case of Eggs from First Rural Schoolhouse Postal Station in the United States, Two Taverns Mount, Jay Township, Pa. 2, Postal Truck Arriving at First City School Station in the United States, Park View Community Centre, Washington, D. C., with Load of Farm Products; 3, A Postal Truck Collecting a Parcel Post Package at a Farm; 4, the Old and the New Way of Hauling Parcel Post Packages; 5, Taking on a Freight of Baskets of Fruit at a Country Store Station.

that of the Postoffice department.

Carriers Cannot Handle Large Crops.

The mail carriers could not be expected to handle crops in large volume, and for this reason practically every farmer would require his own vehicles for haulage. Or one farmer might engage to do haulage for a number of others, or a co-operative association might transport farm products in considerable quantity. But the mail carriers could carry fruits and vegetables, eggs, butter and other foods from farms, which would be delivered direct to consumers, the carriers making the collections and later returning to the farmers the receipts for their sales.

But for such transactions business relations must be established between producer and consumer. The farmers must have customers who require regular supplies and must be able to deliver to carriers whatever is contracted for. The customers must be convinced of the quality and the prices must be no greater than are charged in the local markets. The buyers must have whatever they want at the established intervals. If, to illustrate, the consumer can obtain delivered to him at specified times certain food he must depend upon for the maintenance of his household, that will be of good quality, he will undoubtedly prefer this form of purchasing, even at the same prices as are paid in stores, because it will be placed in his hands within a very few hours and he will be relieved of all attention to this supply after the contract has been entered into. Communication can be had by mail or telephone at convenience with reference to supplemental orders.

Can Serve Considerable Extra Territory.

The reader may assume that the carriers cover specified routes and cannot go to all who reside in the vicinities through which they pass, but there is no reason why parcels cannot be left at stores, or schoolhouses, or different farms on the routes to be collected. As a matter of fact a farmer a considerable distance from a route can be served by it provided that he will make the arrangements.

Most of the rural route carriers use light vehicles or small automobiles, but they could utilize light trucks, such as will carry up to 3000 pounds, quite as well, and these would have vastly great earning power a considerable part of the year. There is no doubt that such a system as has been outlined would, when developed, save much of the time now required to transport products to the markets. This would be a distinct gain to farmers and would to some extent compensate for the increased cost of labor. Not only could this time be devoted to farm work, but the farmers could make purchases by mail or telephone and have the deliveries made direct to them by the carrier service, which would be another direct saving of time. The greater the volume of delivery to the farms the greater would be the revenue of the service.

Can Develop Service by Education.

The main need for development of farm-to-consumer buying and store-to-

farmer selling, is education. The farmers realize they can buy and have deliveries made by carrier, but as their sales are mainly to stores and commission houses or delivery at railroad terminals for shipping, they believe they must do the haulage themselves. If they could ship a considerable part of their products by parcel post they could be quickly convinced of the desirability of so doing.

What is necessary is a system that will bring the farmers and buyers together. The consumers know they can buy in the stores, they know they must pay a substantial profit to the storekeepers, and they know they must give more or less personal attention to this purchasing. But they have been accustomed to the system and accept it without question. The farmers have sold in quantity as a rule because their markets are limited, they prefer one transaction to a multiplicity, and selling has been subordinated to production, largely from the fact that they can devote so little time to finding customers. Not only this, disposing of their products to a comparatively few buyers and having no standard of prices, the sales are often at extremely low level. The middlemen justify low prices by the claim that farm products are generally perishable and they, if they purchase, must take any loss that may eventuate.

Farmers Can Develop Consumer Buying.

As a rule the only development of individual customers is by dairy farmers, who deliver milk themselves. And yet the average dairy farmer plans to supply a specific number of customers rather than increasing the total and the business. The milk distributors in cities endeavor to systematically develop business by canvassing and pay their drivers for all new customers. There is no doubt whatever that farmers could establish permanent trade relations with families if they sought to do so, probably to the maximum they could undertake to supply, but this seemingly can only be brought about by understanding, and this could result from direct solicitation.

The rural delivery system of the Postoffice department is now being maintained by taxes paid by all the people. It is a permanent government service and is not necessarily dependent upon the revenue it earns. Now it is operated at a large loss, but it could be made far more productive, perhaps self-sustaining, by the development of more parcel post transactions. We have then the condition of people paying taxes to maintain a service that is operated at a deficit for the convenience of country residents, and the city dweller neglecting to take advantage of absolutely dependable facilities they are paying for, when by the exercise of plain common sense all who have mail collection and delivery could benefit.

People as Whole Would Benefit.

And this benefit would be substantial. The farmer would have a far broader market and would receive better prices, as well as having more time for productive work. The consumer could have high quality products at reduced prices and direct service. The statement is

made that one of the important factors in the so-called high cost of living is the profit taken by the distributors, the middlemen, which must be added to what is paid by the ultimate consumer.

The farmers complain that they are compelled to sell at prices that do not afford a reasonable profit—that their products are often priced for resale at 100 per cent. more than what they receive for them, and that they cannot operate their farms productively because the middlemen fix both the buying and selling prices, and they must compete against the mechanical industries for labor. Between the non-producers and labor they are practically helpless.

Yet the rural delivery system of the Postoffice department affords both farmer and consumer a direct channel for commercial transactions. It is well organized, serves a vast territory, and reaches a very large part of the people. It is always instantly available.

The Market Is Open for Exploitation.

Seemingly the one thing necessary is to educate the buyers to the possibilities of the service and to stimulate the farmers to developing customers for their products. The market undoubtedly exists. If the farmers sought to exploit it they would unquestionably be well rewarded and the consumers would practically benefit.

And with reference to equipment, so far as the rural routes were concerned the Postoffice department could see to it that the vehicles required for transportation were available as necessary. The department is actively promoting rural express service that could be operated in addition to the rural delivery. There is abundant reason to believe that if the volume of parcel post packages offered justified the department would keep pace with the needs for delivery and collection. The department is operating a considerable number of trucks, among them being fleets of Commerce machines that are used in cities for collection and delivery and on parcel post or rural express experimental service in the states of Pennsylvania, Utah, Maryland and Virginia. The results obtained have impelled requests for additional appropriations for extension. Congress has not as yet approved the recommendations, and some of the congressmen apparently believe that the expenditure would be injudicious, but the department maintains that the economical possibilities amply justify the cost, because it will make lower prices for consumers and higher prices for the farmers, as well as minimizing the labor necessary to operate the farms.

WELEVER PISTON RING CO. INCREASES CAPITAL.

The Welever Piston Ring Co., Toledo, O., has increased its capital from \$20,000 to \$100,000, which increase is to be used principally for expansion of its manufacturing facilities. When the new equipment has been installed the production is expected to be quadrupled, which is believed will be adequate for a considerable period of time.

TRUCK WITH 100 MILES A DAY RECORD.

Use for approximately 100 miles a day, allowing 300 working days a year, for 10 years, is the record claimed for a two-ton White truck in the service of the W. P. Southworth Co., Cleveland, O. This company operates a grocery business and has three stores in Cleveland, and its stock must be hauled to these stores from the different railroad and steamer terminals, and deliveries must be made.

The truck, which is specified on the records as "A," was delivered to the owner in May, 1910, and John Jedlicka was assigned to drive it. For more than nine years the machine was handled by this man, and with such care and judgment that he had but one slight accident. Jedlicka was an extremely careful and conscientious man and to his skill was due the exceptionally satisfactory service obtained. When he died James Duffy was placed in charge of the truck and the work done is quite up to the previous standard.

For 4½ years the truck was the only machine operated, but then larger units were bought and "Old A" has been used for more general work. During the time it was worked alone O. S. Southworth has estimated the truck was driven about 200,000 miles. and since then the mileage has been increased to 300,000, so that the daily average is close to 100 miles a day for the entire period.

The White Co. believes that truck A is the oldest of the trucks it has sold to be continuously in the service of an owner. There are trucks that ante-date it in delivery, and some have been driven farther, but this is regarded as the one that has the long distance, single ownership record.

THE FEBRUARY QUIETERION.

The February issue of The Quieterion, published by the Hyatt Roller Bearing Co. at Detroit, Mich., and dedicated to things that are quiet, has the usual quota of clever offerings, in which roller bearings have no part. It is a pleasant companion for one who would seek a restful quarter hour.

TRAILER MANUFACTURERS SUGGEST LAWS TO LEGISLATURES.

To guide the legislatures of a dozen states where bills providing for the regulation of trailers are now pending, recommendations as to adequate laws on this subject have been prepared by the Trailer Manufacturers' Association, with headquarters in New York. A uniform vehicle bill has been drawn up after two years of work by a special committee in Washington representing the National Association of State Highway Officials, the Highway Industries Association, the National Automobile Chamber of Commerce and the American Automobile Association. Its provisions have been approved by national associations representing the automobile, motor truck and trailer manufacturers, dealers and users.

The trailer manufacturers hope that by furnishing information as to types, sizes and construction of trailers and the manner in which they are used, it will be possible to help legislators frame laws that will protect the highways and insure the safety of all who use them, without placing obstacles in the development of the most economical means highway transportation.

HOISTS AND DUMP BODIES.

The Kilbourne & Jacobs Co., Columbus, O., has undertaken one of the largest dumping equipment programmes ever attempted in the motor truck industry. Automotive engineers claim that by standardizing the steel dump body and developing its hoists this concern has accomplished as much toward effective and low cost distribution motor truck dumping equipment as any organization in the country. The company makes five distinct types of bodies and three of hoists. The company originated and invented its hoists, which embody principles found in no other machines of this class.

\$500,000 CHICAGO PLANT.

The Stromberg Electric Co. announces its intentions to erect a new plant in Chicago at a cost of \$500,000.

TRUCKS AND TRACTORS GET WEEK AT SCRANTON SHOW.

A second week was added to the Scranton, Pa., automobile show for the purpose of displaying trucks and tractors, and the latter exhibition proved one of the biggest and most important of its kind ever held in that territory. The more practical side of motor car development, that which pertains to business, industry and agriculture, won fully as much interest as did the first week's showing of cars. The development in the construction of trucks since the war and the amazing progress in the tractor during recent days were seen and appreciated.

This is the first time in the history of the automobile industry in Scranton that a week has been given over to an exclusive display of trucks and tractors. The heavier vehicles were formerly shown along with the passenger models, but it was agreed that justice could not be done either by a combined show. The truck and tractor show included 75 machines, fully representing both industries. It is estimated that motor trucks used in Scranton represent an outlay of over \$7,000,000 and that 5000 people are employed through their use.

CONNECTICUT SPENDS \$125,000 TO FIGHT BLIZZARDS.

The State of Connecticut expended \$125,000 to keep 900 miles of state roads open against the 1920 blizzards, maintaining an army of 800 men and 100 motor trucks, tractors and plows to do the job. Connecticut realizes the value of good roads and the necessity for truck transportation, and feels that the money was expended in a worthy cause.

The following amounts were expended in various cities of the state: New Haven, \$50,000; Hartford, \$45,000; Bridgeport, \$40,000; Waterbury, \$38,000; Stamford, \$10,000; Norwich, \$10,000; New Britain, \$8500; Bristol, \$6200; Meriden, \$5000; New London, \$4000; Danbury, \$3500; Winsted, \$3000; Rockville, \$2000; Middletown, \$2000, and Southington, \$1000.

So rugged was the task that dozens of heavy army trucks donated to the state by the War Department broke down under the strain.

SHELDON WORKS EXPAND.

The Sheldon Axle Works at Wilkes-Barre, Pa., is to be expanded through the erection at once of a heat treating plant for alloy steels and the extension of the assembling and shipping departments. The proposed changes were recently announced by George M. Wall, vice president and general manager.

ARMLEDER TRUCK HAS NEW RATING.

The O. Armleder Co., Cincinnati, has discontinued the production of a truck chassis rated at 4000 pounds load capacity and it will be succeeded by model HW, which has a rating of 5000 pounds.



White Truck, Two-Ton Capacity, That Has Been Driven More Than 300,000 Miles in the Service of the W. P. Southworth Co., Cleveland, O., in 10 Years.

COLUMBIA TRUCKS AND TRAILERS



**1½-2½ TON
TRUCKS**

**MEDIUM PRICED TRUCKS
THAT WILL LOWER YOUR
TRANSPORTATION COSTS**

Columbia Truck construction is absolutely proven,—by engineering and by service experience.

This quality is the buyer's investment,—it is a guarantee of exceptional endurance; of minimum operating and maintenance expense and maximum period of service ability.

It insures to the owner the fullest measures of utility, of productiveness and of actual returns upon the capital invested.

There is an extremely large factor of safety in every unit and every assembling detail. No trucks are better built, few are as well built, and measured from any angle of buying or service none is equal value for the price.

And back of this quality is a dealer's organization developed to afford service that will keep the machines operative. This service is a part of the price. It is as much of an investment to the owner as the truck.

A Columbia agency is a great opportunity for big business for the man who wants business. Write us. If territory is open we'll present a splendid proposition.

Columbia Units Are Guaranteed for One Year

Columbia Trucks
Capacities, 1½ and 2½ Tons

Columbia Tractors
Semi-Trailer Capacities, 3 and 6 Tons

Wheelbase, 114, 134, 144 and 164 Inches

COLUMBIA TRUCK & TRAILER COMPANY
PONTIAC, MICHIGAN

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

TRADE AND INDUSTRY PERSONNEL

CAPT. PERCIVAL REJOINS VAN CORTLANDT CORP.

Capt. Charles C. Percival, familiarly known during a connection with the automotive industry for 25 years as "Old Doc," after 18 months' service in France, Belgium and Germany in the infantry, ordnance and field artillery branches of the United States army, has been retired and has rejoined the Van Cortlandt Vehicle Corporation, New York City, as advertising and wholesale manager, which position he resigned some time ago.

Capt. Percival was in the St. Mihiel, Meuse and Argonne offensives with the American Expeditionary Force and was with the Army of Occupation in Germany. While abroad he edited (when printing was available) the "Bomb" and the "Steering Wheel," which were Ordnance and Motor Transport Corps publications, editions of which were published in France, Alsace-Lorraine, Belgium, Italy, Germany and England.

PATTERSON JOINS OSHKOSH TRUCK SALES FORCE.

L. D. Patterson, who for a considerable time was connected with the Olds Motor Works as factory representative, has joined the Oshkosh Motor Truck Manufacturing Co. as district sales manager, and will cover southwestern territory with headquarters at Tulsa, Okla.

CLIVE A STANDARD TERRITORIAL SALES MANAGER.

Hamilton Clive has been appointed a territorial sales manager for the Standard Motor Truck Co., Detroit and assigned to the central states. He was formerly a salesman in the eastern states and his success brought him promotion.



V. V. Torbensen, Inventor of the Torbensen Internal Drive, Now of Eaton Axle Co.

SELDEN TRUCK AGENT ON TOUR OF SOUTH AMERICA.

J. H. Wise of the Selden Truck Corporation, Rochester, N. Y., is touring South America and the Latin American



J. H. Wise, Now Pioneering Latin-American Markets for Selden Truck Corporation.

countries to study the motor truck situation. He has had 18 years' experience in the sale of automobiles in Mexico, Cuba, Spain and Central and South America. He will be six months on the job and will be able to talk authoritatively on the subject when he concludes his investigations.

Mr. Wise maintains that lack of transportation facilities is the main factor in holding up the development of South America. Brazil has just opened up 600 miles of good roads and other countries are fast repairing their highways, all of which means an early call for motor trucks. That these countries are awakening to the possibilities of the truck is shown in the fact that in June of last year 256 trucks were imported by Latin and South American states. This is regarded as being a fundamental on which the future of the market may be judged.

An instance of where the truck would be a vital economic factor in that territory is cited by Mr. Wise in the case of Cuba, where the season for green peppers is three or four weeks ahead of Florida. By rushing its product to market the Cuban crop could be sold in the United States a month ahead of the Florida product, thus garnering big pre-season prices.

Mr. Wise is working under the direction of Gaston, Williams & Wigmore, a large export house, which company handles the Selden foreign business under the supervision of R. H. Salmons, vice president of the Selden Truck Corporation.

TURNER IS F.W.D. DISTRICT SALES SUPERVISOR.

W. C. Turner has been appointed a district sales supervisor for the Four Wheel Drive Auto Co., Clintonville, Wis., builder of F-W-D trucks, for Iowa and Nebraska territory, with headquarters at Omaha. During the war Mr. Turner was with the Motor Transport Corps in charge of a motor supply train base at Waco, Tex., and later was with the Chicago branch of the Packard Motor Car Co.

KILPATRICK NOW NAPOLEON SERVICE MANAGER.

J. E. Kilpatrick has been appointed service manager for the Napoleon Motors Co., Traverse City, Mich. He was a lieutenant in the Motor Transport Corps, U. S. A., and had an experience in the army that has qualified him for the work he has undertaken.

CHRYSLER JOINS RAINIER SALES ORGANIZATION.

P. C. Chrysler, who has been associated with several truck branches and agencies, and is well known in New York City and adjacent territory, has joined the Rainier Motor Corporation as assistant to Sales Manager P. N. Linberger.

KRUSPE DIRECTS STANDARD SALES PROMOTION.

The factory sales promotion department of the Standard Motor Truck Co., Detroit, Mich., has been placed in charge of Edward W. Kruspe, formerly western sales manager, who has been permanently recalled from field work.



H. P. Mills, New Credit Manager for the Acason Motor Truck Co., Detroit.



EVERY day the great American fleet of *International Motor Trucks* threads over city street and country road, unraveling 2,000,000 dependable miles from the limitless fabric that is *International Service*.

INTERNATIONAL MOTOR TRUCK haulage has developed into a powerful factor in the efficient conduct of nearly 200 lines of business, because of the traditions of worth and reliability treasured by the International Harvester Company.

For eighty-nine years this Company has been gaining in skill, guarding and never lowering standards, while manufacturing high-grade machines. For fifteen years it has been expending skill and experience in building engines for heavy-duty service. The trucks it offers are International-designed and International-built.

Wherever you see an Inter-

national at work (recognize it by its distinctive sloping hood) you may learn a chapter in International truck success. One concern alone today has over 1,800 International trucks in its service. Fleet owners analyzed and compared and knew the facts, you may be sure, before they invested in *International Motor Trucks* as the best solution of their transportation problems.

International sizes range from $\frac{1}{4}$ ton to 3 $\frac{1}{2}$ -ton. Whatever the requirements, these trucks and International Service are fitted to fill the bill. The future for International truck and dealer is one of undoubted success.

Motor Truck Department

INTERNATIONAL HARVESTER COMPANY

OF AMERICA INC.

CHICAGO

U S A

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

NEW ENGAGEMENTS AND CHANGES

INDUSTRIAL ENGINEERS.



Forrest J. Alvin, General Manager, United States Motor Truck Co., Cincinnati, O.

FIRESTONE BOSSES ADVANCED.

The Firestone Tire & Rubber Co. at Akron, O., has made a number of executive changes as follows: A. G. Partidge, from general sales manager to vice president in charge of sales; E. W. Be-Saw, from western to general sales manager; F. K. Starbird, from district chief at Minneapolis to western sales manager; J. E. Mayl, from district chief at Boston to head of the sales organization of the eastern division. The company plans to distribute \$150,000,000 worth of tires and equipment in 1926.

GMC DEALER BUSY.

A. S. Hitchcock, manager of the Hartford, Conn., GMC headquarters, announces that the demand for motor trucks was never greater in that vicinity. Business has been steadily booming since the first of the year and there are indications that the call will be in even greater volume from now on. Mr. Hitchcock was for a long period connected with GMC branches at Boston, Providence, R. I., and Springfield, Mass.

WIRTH JOINS KELSEY.

The Kelsey interests have secured the services of H. M. Wirth, identified with the Liberty Motor Car Co., Detroit, since its forming, and previously with the Saxon Motor Car Corporation and the Chalmers Motor Car organization.

SELLING STANDARD TRUCKS.

The Standard Motor Sales Co., Inc., recently appointed distributors in Colorado and surrounding states for the Standard Motor Truck has signed contracts for the distribution of nearly \$1,000,000 worth of trucks. W. S. C. Smith is president and A. J. Patterson vice president.

Charles M. Manly and C. B. Veal, both widely known in automotive engineering circles, have opened offices as industrial engineers at 250 West 54th street, New York, and will specialize in the coordination of engineering and manufacturing requirements in the design, production and operation of automotive power plants and vehicles.

Mr. Manly was president of the Society of Automotive Engineers last year and during the war was vice president of the Curtiss Aeroplane & Motor Corporation. Mr. Veal was associated with Mr. Manly in the Curtiss Corporation and the S. A. E. He was formerly in charge of the department of machine design at Purdue University.

MOORE HEADS DENBY CO.

The Denby Motor Truck Co. held its annual meeting at Detroit recently and elected the following officers: President and general manager, A. S. Moore; first vice president, Major Edwin Denby; second vice president, T. S. Simpson; secretary, M. H. O'Brien; treasurer, E. R. Alles; assistant secretary and treasurer, H. T. Carpenter; purchasing agent, E. A. Murphy; production manager, D. C. Evans. Walter J. Drake, former vice president, retires.

PRICES UP ON AUTO PARTS.

The price of tires has increased 20 per cent. this month and the cost of lumber, leather and other raw materials has jumped from 40 to 50 per cent. Steel prices are beginning to soar. Automobile parts are naturally on an ascending scale. Engines have gone up 22½ per cent., frames 50, bodies 35, springs 25, axles, clutches, wheels and top materials from 20 to 35 per cent.



C. L. Costello, New Sales Manager, United States Motor Truck Co., Cincinnati, O.



George D. Wilcox, Director of Sales and Advertising, Commerce Motor Car Co., Detroit.

BUDA SERVICE MANAGER.

The Buda Co., manufacturer of Buda engines, has appointed R. A. Kiken to the new office of service manager of the engine division, and believes that his appointment means efficient and prompt service in the disbursement of spare parts. Mr. Kiken has been with the company since 1910, with the exception of two years in the army during the war, from which he emerged with two overseas stripes. He has served in every phase of factory work and knows the business from the ground up.

KENNEDY STEEL AGENT.

The Michigan agency for the Union Electric Steel Co. of Pittsburgh, manufacturers of tool and alloy steels, has been entrusted to Don F. Kennedy, metallurgist and manufacturers' agent, 1257 David Whitney building, Detroit. Mr. Kennedy also handles the towmotor in Michigan and Toledo. The Union company will soon be in a position to produce finished bars, die blocks and steam hammer forgings.

SANFORD SIGNS LAKE.

The Sanford Motor Truck Co., Syracuse, N. Y., has appointed J. M. Lake general sales manager. He was connected with the sales department of the Chase Motor Truck Co. before going to France with the Engineering Corps. He has been in the publication field since his return last spring.

John Squires, assistant general manager and chief engineer of the Denby Motor Truck Co., has ended his services with that concern. Mr. Squires has made no statement as to his future plans.

EISEMANN

MAGNETO



"for Dependable and Efficient Service"

The modern motor truck is a tower of strength—and four out of five of the well-known makes are equipped with the Eisemann Magneto.

At the recent New York Show the majority of all makes of trucks exhibited were Eisemann-equipped—almost 36% more than all other makes combined.

The reason, of course, is directly related to the magnificent service which this super-magneto renders. Its steady, sure, flaming hot spark thoroughly fires the richest or leanest mixture—even low-grade fuels—helping your engine to deliver its maximum power at all speeds.

Proof against oil, water, dust and grime, the Eisemann is always on the job!

EISEMANN

MAGNETO CORPORATION

Plant and General Offices—32 Thirty-Third St. Brooklyn, N.Y.
CHICAGO—1469 So. Michigan Avenue
DETROIT—85 Willis Avenue, West
LONDON, ENG. Stanley J. Watson, 37 Sheen Road, Richmond

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

AMONG THE SALES ORGANIZATIONS

NEW DODGE EXECUTIVES.

Dodge Brothers, Detroit, Mich., announce the appointment of Traffic Manager Arthur T. Waterfall as director of traffic. Preston G. Findlay, traffic manager of the Michigan Central, has been named as his assistant. F. J. Haynes is scheduled as vice president and general manager, the former two changes being effective March 15 and the latter being due for announcement as soon as Horace E. Dodge returns from Florida.

I. D. CROSS PROMOTED.

I. D. Cross has been named western sales supervisor for the Northwestern Chemical Co. and will have full charge of the entire western territory, with a voluminous sales organization under his direction. He is an experienced salesman of automotive equipment. He has been representing the company recently at Marietta, O.

HORACE E. DODGE DIRECTOR.

Horace E. Dodge has been named to succeed his brother, John F. Dodge, deceased, as a member of the board of directors of the National Automobile Chamber of Commerce. This body recently adopted a resolution expressing the industry's loss through the death of John F. Dodge.

NEW MACK BULLDOG EDITOR.

The Mack Bulldog, the trade magazine published by the International Motor Co., manufacturer of Mack trucks, has a new assistant editor in the person of P. L. Sniffin, who is also in charge of the Mack publicity bureau. He also gets out the booklets and circulars issued by the company.

PETERS WITH CLARK BROTHERS.

O. M. Peters has been named general manager for Clark Brothers Co., New York. He was general superintendent for the Emerson-Brantingham Co., Rockford, Ill. W. L. Clark has been appointed domestic sales manager and Frank M. White assistant domestic sales manager for the Emerson-Brantingham Co.

ROBINSON'S NEW JOB.

Roscoe Robinson is to join the organization of the Bethlehem Motors Corporation in Pennsylvania, having resigned from the production department of General Motors Truck Co. in Pontiac.

NEW WICHITA TRUCK ENGINEER.

The Wichita Falls Truck Co., Wichita Falls, Tex., has engaged O. L. Formingle, research engineer of the Fifth Avenue Coach Co., New York City, as chief engineer.

GOODYEAR EXECUTIVES CHANGE.

The Goodyear Tire & Rubber Co. has named A. E. Ellis as manager of automobile tire sales for the entire New York district territory. He is succeeded as New York branch manager by S. H. Cunningham. W. G. Bedford, formerly service manager of the Metropolitan branch, succeeds Cunningham as assistant New York branch manager.

KISER WITH THE GMC.

William P. Kiser has become associated with the financial department of the General Motors Corporation. He was successively secretary of the National Cash Register Co., treasurer of the Toledo Scale Co. and then general auditor, vice president, assistant general manager and secretary of the Chalmers Motor Co.

MARTIN-PARRY ENGINEER.

The Martin-Parry Corporation, Indianapolis, Ind., has named James McGlashan, for two years head of its engineering department at York, Pa., as chief engineer. He will have his headquarters at York. He will have charge of the designing and engineering departments at the Martin-Parry plants at York and Indianapolis.

WIEMEYER CITY MANAGER.

F. S. Wiemeyer has been appointed sales manager for the Traffic Motor Truck Corporation of that city. He has had valuable experience in the automobile sales business. The appointment was recently announced by Harry H. Hawke, general sales manager, who is now on a trip through the West.

KNOWLES WITH STAYBESTOS.

The Staybestos Manufacturing Co., Philadelphia, has engaged E. B. Knowles as general manager and secretary. He was for years with the Raybestos organization and for the past seven years has been with the sales organization of the Thermoid Rubber Co.

H. T. MITCHELL'S NEW POST.

H. T. Mitchell has been signed to serve in an advertising and promotional capacity in the development of the farm tractor business of the General Ordnance Co., New York. He was formerly with the Nash Motors Co., Kenosha, Wis.

NEW RAYFIELD BOOMER.

The Beneke & Kropf Manufacturing Co., Chicago, manufacturer of Rayfield carburetors, has appointed F. C. Steward, formerly advertising manager of the McDagell company, Frankfort, Ind., as its advertising manager.

NEW MACK CHIEF BOOMER.

H. C. Bailey, who has had wide experience in selling, sales managing, advertising and editing, has been appointed advertising manager for the International Motor Co., maker of Mack trucks, succeeding D. O. Skinner, resigned. Mr. Bailey has been engaged in the automotive industry about Chicago and St. Louis, although a native of Philadelphia.

DOTY A SANFORD MAN.

The Sanford Motor Truck Co., Syracuse, N. Y., has appointed C. F. Doty as special representative. The new official was formerly district manager of the Bethlehem Motor Truck Co. in Eastern Canada and New York, and has also been associated with the Stewart Motor Truck Co. and the Studebaker corporation.

REO'S NEW ADVERTISING PLAN.

The Reo Motor Co., Lansing, Mich., has merged the advertising and sales promotion departments under the direction of Walter K. Powers, sales promotion manager, this action following the resignation of F. L. Waite, advertising manager.

HUMPAGE TO TAKE A REST.

F. R. Humpage, vice president and general manager of the Wilt Twist Drill Co. of Canada, Ltd., Walkerville, Ontario, has tendered his resignation, to take effect on March 31, and will leave for Miami, Fla., in the interests of his health. He will later place a cleaning compound on the market.

WILLIAM R. PETZE RESIGNS.

William R. Petze, who for seven years has been connected with the Prescott Auto Parts Co., Webster, Mass., maker of piston rings, as sales manager, has resigned, and has not yet announced his future plans.

PATTERSON WITH OSHKOSH.

The Oshkosh Motor Truck Co. of Oshkosh, Wis., has appointed L. G. Patterson, factory representative of the Oldsmobile, as district sales manager.

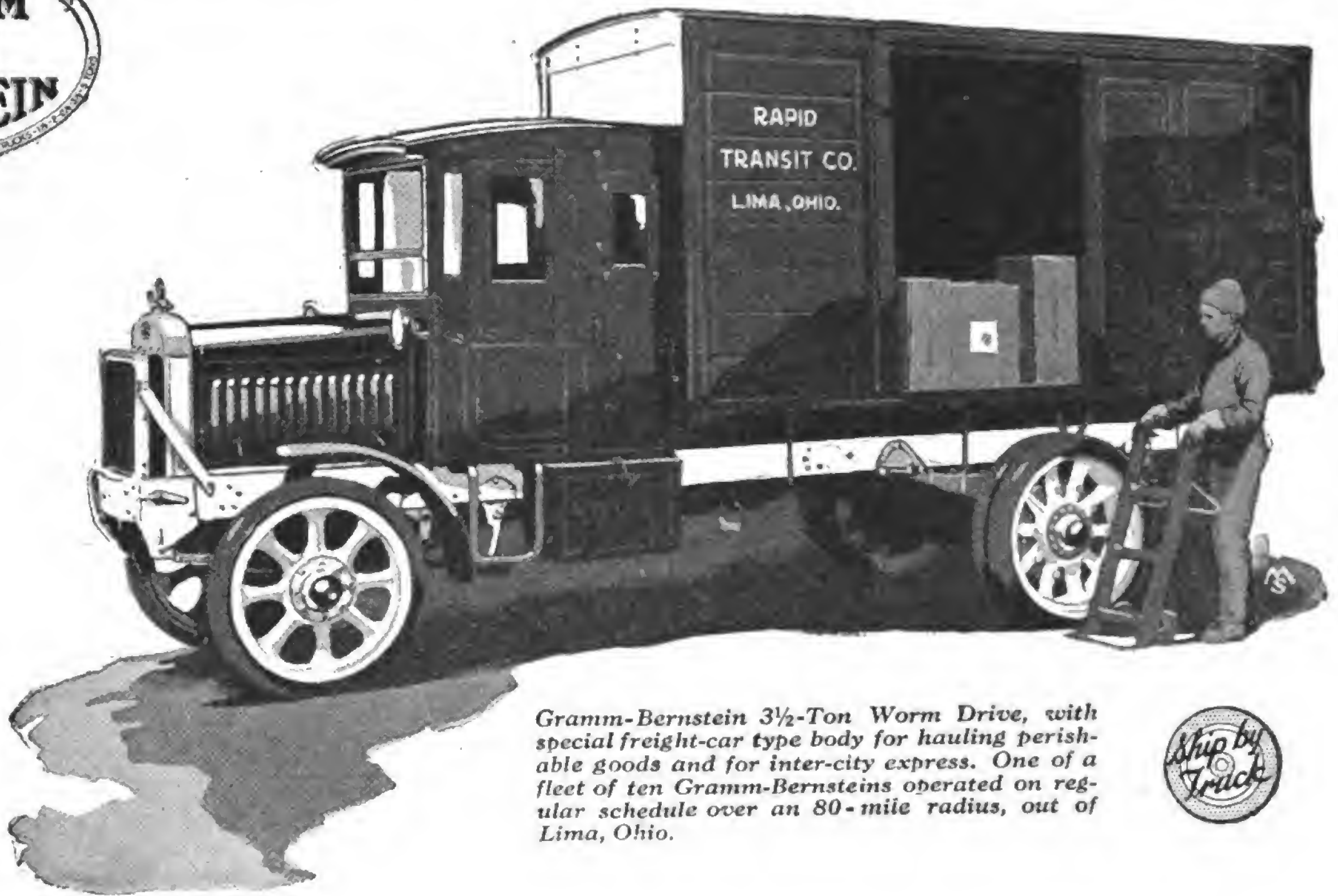
CUMMINGS RESIGNS.

Arthur Cummings has tendered his resignation as advertising manager for the Timken Roller Bearing Co. of Canton, O.

TRACY SELLS GLOBE TIRES.

The Globe Rubber Tire Co., New York, has appointed R. B. Tracy, for more than 15 years connected with the Michelin Tire Co., recently as Chicago district manager, its western manager.

GRAMM-BERNSTEIN TRUCKS



Gramm-Bernstein 3 1/2-Ton Worm Drive, with special freight-car type body for hauling perishable goods and for inter-city express. One of a fleet of ten Gramm-Bernsteins operated on regular schedule over an 80-mile radius, out of Lima, Ohio.

It Establishes Its Own Preference

The Gramm-Bernstein Truck is always worth its price.

It is not a difficult matter for the Gramm-Bernstein dealer to establish this fact.

It is all the easier because he is not obliged to justify price by comparison with other trucks.

The Gramm-Bernstein design contains certain fundamental patented superiorities.

These betterments give the Gramm-Bernstein truck the advantage, because they are not to be found in any other trucks.

The exclusive, constant-mesh transmission, the patented power take-off, the oilless universal joints, the radiator shroud, the complete equipment, and other individualities, in themselves, makes the truck worth more.

The dealer does not have to waste time and effort in explaining away price differences.

He sells the Gramm-Bernstein Truck on its distinctive superiorities of construction and service, made possible by B. A. Gramm's twenty years of development in the organization and the building of better trucks.

Because the dealer does not have to enter competition, he establishes Gramm-Bernstein preference more quickly and with greater profit and reputation to himself.

All Gramm-Bernstein Transmissions are trouble-proof and are provided with a pad for attaching Gramm's Basic Patent Power Take-off. Dealers and truck owners should assure themselves that any trucks purchased with power take-off do not infringe B. A. Gramm's Basic Patent No. 1194994.

The Gramm-Bernstein Motor Truck Co., Lima, Ohio

Pioneers Since 1901—Builders of the First Liberty (U. S. A.) Truck

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

NEW PLANTS AND WORK CHANGES

THREE TRUCK ENGINES DRIVE PLANT MACHINERY.

Three Hershell-Spillman model 7000, $3\frac{1}{2} \times 5$, four-cylinder stock motors, recently stood an unprecedented test when they were utilized temporarily until the installation of the steam power plant at the All-American Truck Co., Chicago, which had its machinery set and was forced to get out rush work immediately.

For 21 days, 11 hours a day, these engines were worked and more than met every requirement. Each motor made 1600 revolutions per minute, 1,056,000 a day, which was equivalent to running an All-American truck, model $2\frac{1}{2}$, a distance of 286 miles in 11 hours, at a constant speed of 23 miles an hour, pulling a load of more than three tons in high gear.

A remarkable feature, because no water was circulating through the radiators, evaporation being taken care of by merely replenishing the water supply from time to time, was the fact that no difficulty was experienced in properly lubricating and cooling the engines during this long run.

The Hershell-Spillman Motor Co.'s plant at North Tonawanda, N. Y., is being enlarged to supply the demand by automotive vehicle builders for four and six-cylinder engines. Before the dawn of 1921 this company will have 185,000 feet of manufacturing floor space and will be able to turn out 400 engines a day.

GOODYEAR EXPANSION PLANS.

The Goodyear Tire & Rubber Co., Akron, O., is going along with its big expansion plans, which include a million and a half dollars worth of additions. Some of the new structures will augment the present general office buildings.

AMERICAN-LA FRANCE CO. BUILDS COMMERCIAL TRUCKS.

The American-La France Fire Engine Co., the largest builder of fire apparatus in the world, has invaded the motor truck field and is going at the job on a wholesale scale. A modern plant is already in course of erection on a tract of land purchased at Bloomfield, N. J., near Newark. The acquired territory embraces 23 acres. The factory is to be in operation this summer. The location is near the Metropolitan market and means quick service to patrons.

The company refuses to wait for its new plant, however, and is already turning out its first series of trucks in its Elmira, N. Y., factory. The types include vehicles of five, $3\frac{1}{2}$, $2\frac{1}{2}$ and $1\frac{1}{2}$ tons. In its design the company has followed the high standards employed in its fire apparatus and features adopted by the best commercial truck makers.

Sturdy, reliable construction, which means long life and a minimum cost of upkeep and operation, are the ends aimed at, an achievement which the highly specialized engineering organization the company has at its command guarantees. All parts are manufactured in its own plant, an assurance of the highest quality.

In order to render quick and efficient service the company will carry a full stock of commercial truck parts and will have experienced factory men at its branch sales rooms and service stations in the following cities: Boston, New York, Philadelphia, Pittsburgh, Atlanta, Chicago, Dallas, San Francisco, Minneapolis, Denver, Portland, Ore.; Los Angeles and Toronto, Canada.

Since 1845 this company has been actively engaged in designing and building

fire department apparatus and its reputation is world wide. In addition to equipping about every city of size in the United States, the company has disposed of great quantities of its fire trucks to leading cities of Europe and South America. Its engineers have met all of the difficult requirements of fire service during the 12 years that its motor propelled fire department apparatus has been on the market and the motor trade looks for something beyond the ordinary in the company's new commercial motor truck.

BIG TRUCK BODY MANUFACTURING PLANT FOR TEXAS.

One of the largest motor truck body manufacturing plants in the South will be created at Penn Field, Austin, Tex., from the former radio aviation school and tract of 60 acres. The property has been purchased by D. J. Woodward of San Antonio, and associates, who will put through the project. A company is now in process of organization, with capital stock of \$500,000, none of which will be sold to outsiders.

The present buildings were erected for the War Department by the University of Texas at a cost of \$187,000. The spare time of students at the university is expected to help solve the labor problem at the new plant.

NEW ORLEANS TRUCK IS ON THE MARKET.

The New Orleans Truck Manufacturing Co., New Orleans, La., is in the market and going strong. Work has been started on the erection of a plant. The first truck is already on the streets, the machines being turned out in a temporary plant. The permanent building is to be on Carrollton avenue, near the assembling plant of the Ford Motor Co., New Orleans.

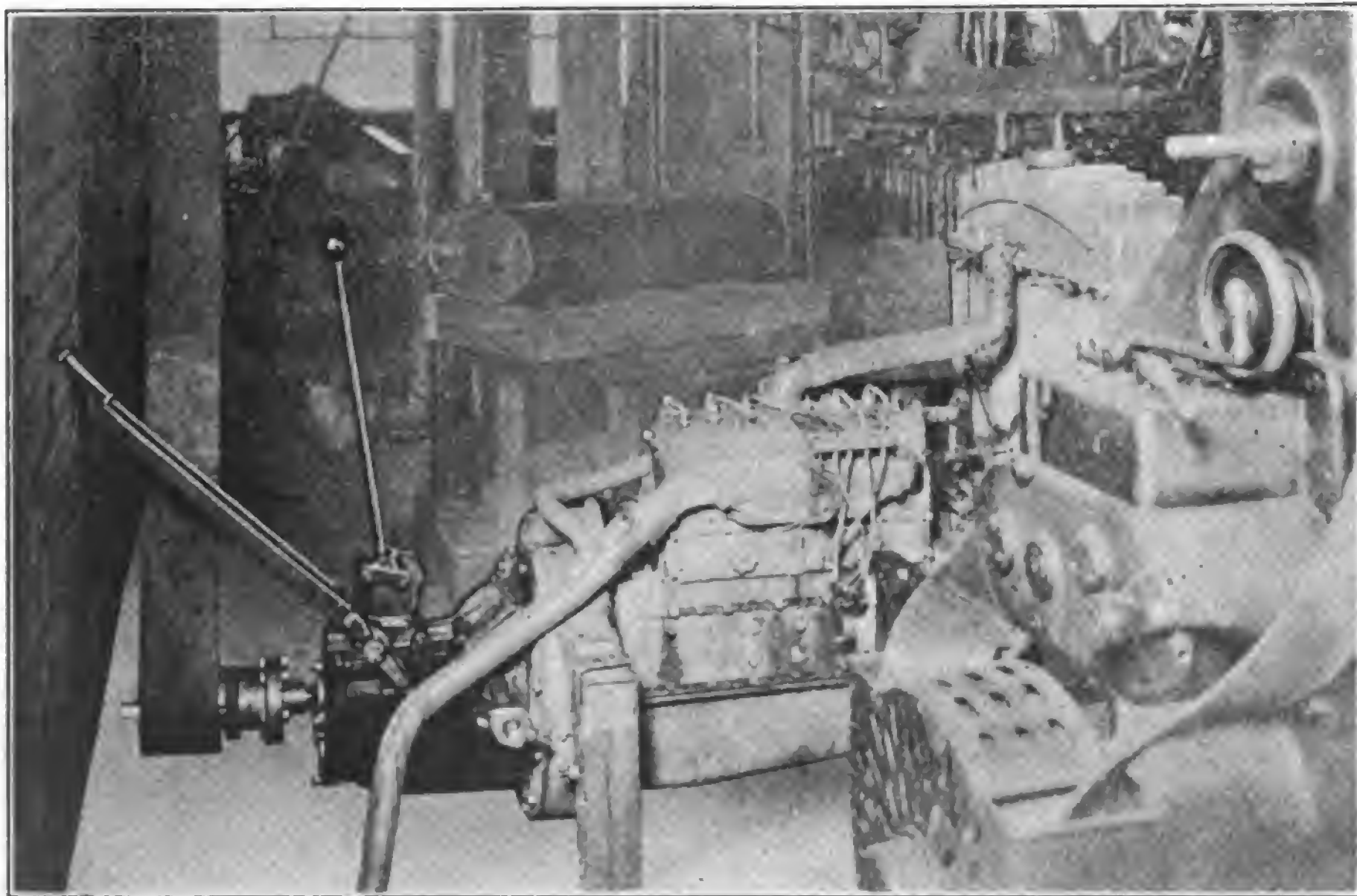
The new company was organized by H. Conneke, president of the New Orleans Loan and Investment Co. The Southern States Securities Corporation is its fiscal agent.

JOINS AUTOMOTIVE INDUSTRY.

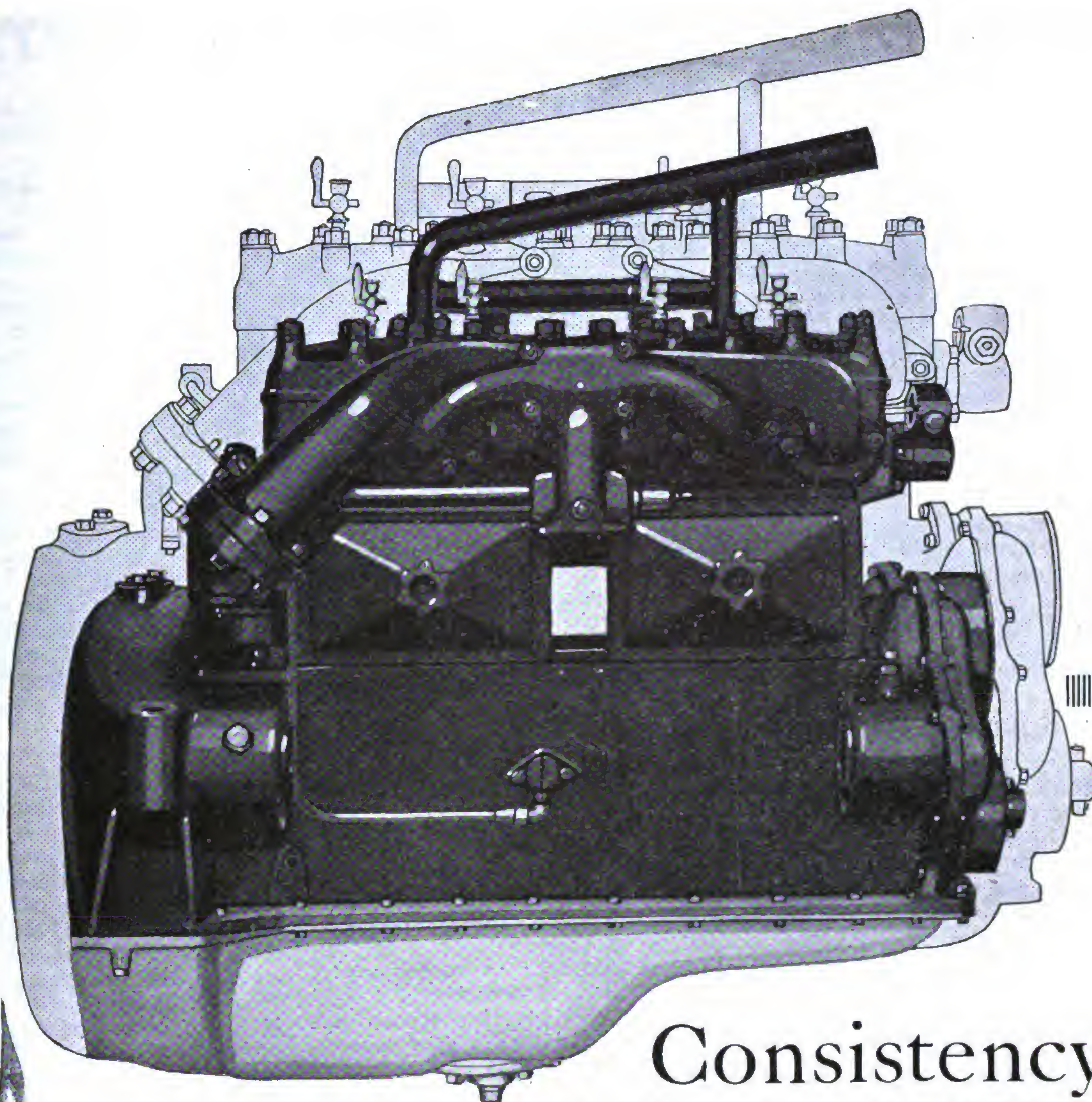
The Brassco Manufacturing Co. of Chicago is to manufacture a line of drawn or rolled mouldings and shapes for the automotive industry, including windshield tubing, bumpers, drip drains, angles and channels. The company, which has been engaged for years in making metal store fronts, will undertake the automotive work in any metal.

GRIFFIN \$2,000,000 PLANT.

The Griffin Wheel Co. is making ready to build a \$2,000,000 plant at Council Bluffs, Ia.



One of the Hershell-Spillman Engines Recently Used for Emergency Power Production at the All-American Truck Co.'s Factory, Chicago.



Consistency in Engine Building

There is a Hinkley Heavy Duty Automotive Engine for every size of motor truck. Yet, from the broad view of Design, Materials and Workmanship there is but one Hinkley Engine.

In the detail of Size alone—with its attendant requirements—does one Hinkley Model differ from another. This fact holds true, because as we see it, there is only one right way to Design Engines, Build Engines and Choose Engine Materials.

Regardless of motor size, we carry out our ideals to the minutest detail; therefore, all Hinkley Engines follow this one accepted and proven path.

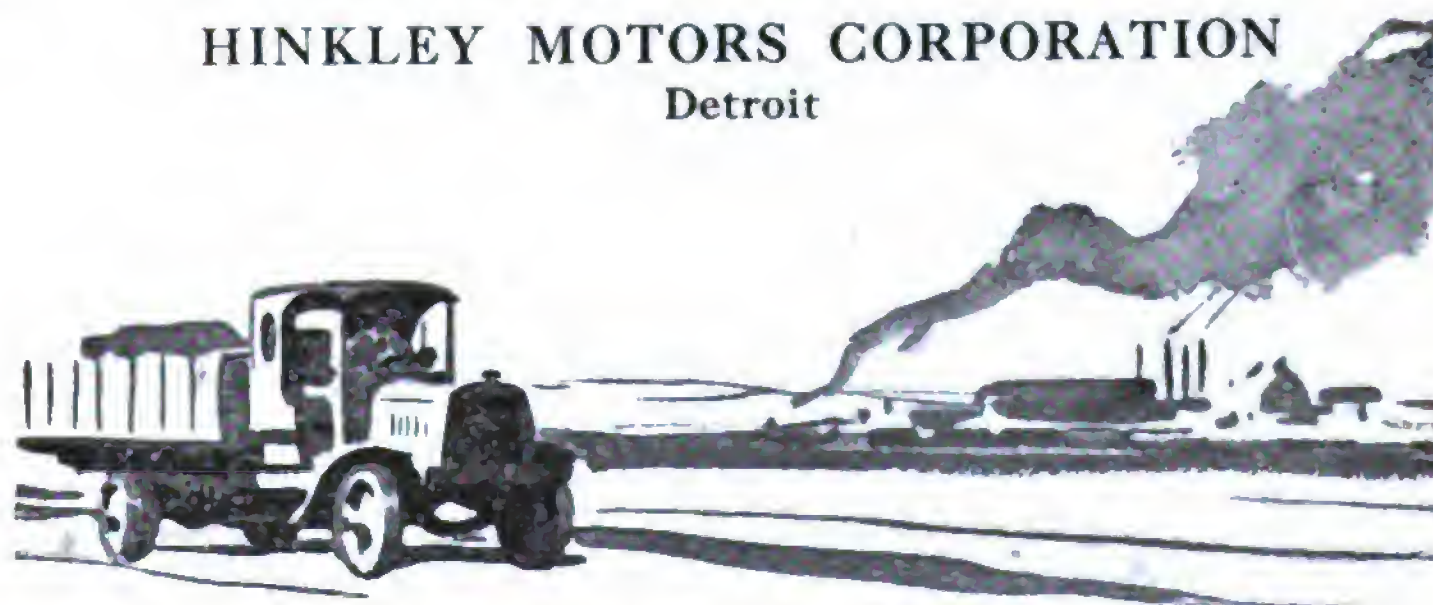
A Hinkley-Engined Truck will consequently perform your task of Mechanical Transport with a degree of power, promptness and efficiency exclusive to its breed.

HINKLEY MOTORS CORPORATION
Detroit

*High Quality Motor
Trucks Equipped With*

HINKLEY
HEAVY DUTY AUTOMOTIVE
ENGINES

*are on sale everywhere
Ask us for a complete
list of these trucks with
their respective ratings.*



(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

SOME INDUSTRIAL DEVELOPMENTS

NEW ORLEANS TRUCK FACTORY.

The New Orleans Truck Manufacturing Co., E. C. Patton, president, now owns the largest truscon steel factory building in the South. This is a "daylight" factory at Tchoupitoulas and Belmont streets, New Orleans, which was bought for \$53,000. It is 76 by 140 feet. The first truck, built by President Patton in a private shop, brought orders for 300. Machinery is now being installed in the new building and production will start at once.

STARTS OWN FOUNDRY.

Fuller & Sons Manufacturing Co., automobile parts builders, Kalamazoo, Mich., has solved the problem of getting an ample supply of gray iron castings by starting a foundry of its own. The first run of iron was poured off Feb. 27 and the plant is now in full operation.

HOIST AND BODY PLANT.

The Wood Hydraulic Hoist & Body Co., Detroit, is making ready to build a plant at Windsor, Ont. It is planned to erect two buildings, one for manufacturing hydraulic hoists and the other for truck bodies, etc.

TUCKER TO LANSING.

The Olds Motor Works, Lansing, Mich., has named Charles A. Tucker general sales manager, succeeding P. L. Emerson, resigned. Mr. Tucker has been in charge of the Nebraska-Oldsmobile Co. at Omaha.

MORE KEYSTONE TRUCKS.

The Keystone Motor Truck Corporation has been organized in Philadelphia to manufacture motor trucks and has taken over the assets of the Commercial Car Unit Co. Its factory building should be ready for occupancy April 1. These are at Oaks, Pa., and have both Pennsylvania and Philadelphia & Reading railway connections. The headquarters will be in Philadelphia. The output of one and two-ton Keystone models have been sold ahead to May 1, when increased facilities will permit immediate deliveries of both.

The officers of the corporation follow: President, H. B. Harper of the Overland-Harper Co.; vice president in charge of sales, M. S. Cooper, formerly manager of commercial car division of Willys-Overland factories; treasurer, C. W. Binns, formerly secretary and treasurer of the Commercial Car Unit Co.; secretary, Allan N. Mann; directors, J. Kearsley Mitchell, H. B. Harper, M. S. Cooper, P. I. Harper and A. E. Nash.

NEW CLYDESDALE SERVICE STATION AT PHILADELPHIA.

The large sale of Clydesdale trucks in Philadelphia and vicinity and the constantly increasing demands of owners for service has impelled the Cawthrop & Wister Co., the distributor in that city, to establish itself in a commodious four-story building at 14 South 21st street. The building has frontage of 70 feet and is 108 feet deep, having a floor area of approximately 30,000 square feet exclusive of the basement.

The company is the largest exclusive truck distributor in the city. Its activities are directed by J. A. Wister, vice president and general manager, who has been engaged in the trade for 10 years and is widely known. He has been active in trade promotion and during his period of service as president of the Automobile Association of Philadelphia that organization made unusual progress.

The first floor of the building is given over to show rooms for a full series of trucks and to truck storage, and on the floors above are the offices, the service department, with every facility for work of all kinds, and a large stock room in which is an unusually complete supply of parts.

LAUREL, MD., GETS A \$2,000,000 MOTOR TRUCK CO.

A motor truck company, headed by Paul J. Prodoehl, and capitalized at \$2,000,000, has begun the erection of a four-story factory building, 100 by 400 feet, at Laurel, Md., on a tract of 140 acres near the old Numsen cannery on a Baltimore & Ohio siding. The officers, all Baltimore men, are: President, Paul J. Prodoehl; vice president, T. B. Webster; secretary-treasurer, Howard G. Clark; chief engineer, I. C. Baker; directors, John H. Kunkel, J. H. Ellard and C. W. Ludwig.

The plant will be equipped with fuel burning engines, which will furnish power for a lighting plant for Laurel and for pumping water in the town. The firm will also operate an ice plant and a sewerage disposal plant. The company expects to get skilled mechanics from the navy yard and Baltimore, and will provide 100 homes near the plant for its employees.

MARTIN-PARRY CORP. PLANS BIG EXPANSION.

The York, Pa., factory of the Martin-Parry Corporation, truck body builder, is to be so increased that the production will be doubled by April 1. The machinery and equipment is now being installed. The directors have approved plans for similar increase of the factory at Indianapolis, and when the factories as enlarged are operated to capacity the output will be approximately 100,000 bodies annually. During the past six months the business has increased 50 per cent. The value of the gross production in 1919 was \$3,500,000, and there is expectation of reaching a total of \$8,000,000 the present year.

FORD ASSEMBLING PLANT IN PORT OF CADIZ, SPAIN.

The Ford Motor Co., Detroit, is establishing an automobile assembling plant within the zone of the "Free Depot" of the port of Cadiz, Spain, and will soon be shipping Fords at low cost and without duty to Portugal, Africa and other points. Considerable machinery has already been shipped and the work of installation begun. Duty must be paid on any machines the company markets from this plant in Spain.

The company will ship its cars to Spain, in parts, in compact crates that will utilize the full carrying capacity of the vessels.

OLDSMOBILE TRUCKS IN CANADA.

The new plant of the Olds Motor Works, Ltd., at Oshawa, Ont., a General Motors subsidiary, which will care for the Canadian requirements for Oldsmobile trucks and passenger cars, began operations March 1. Production plans call for 5000 trucks and cars the first year.



New Service Station of the Cawthrop & Wister Co., Distributor of Clydesdale Trucks, at Philadelphia, Pa.



Hauling 14,630 Pounds

The above photograph shows a $3\frac{1}{2}$ -ton truck and a $2\frac{3}{4}$ -ton WARNER TRAILER hauling a 14,630 pound load. The distance was 56 miles over rough, rutted roads. The round trip for the truck and trailer was made in twelve hours.

This is only one of the instances of the way WARNER TRAILERS are solving the hauling problems and reducing hauling costs. In addition WARNER TRAILERS lower maintenance costs, reduce labor and speed up delivery. Many concerns have been able to save the purchase cost of additional trucks because WARNER

TRAILERS in some size and shape multiply the efficiency of trucks already in service and do more work with less labor and at a lower cost.

Each WARNER TRAILER is scientifically built. Just as much care is taken as in building a high grade motor truck. In many respects the Warner Heavy Duty Truck Trailer is a truck chassis minus the power plant.

WARNER TRAILERS are solving hauling problems for firms in widely different lines of business. Let us show you how it will do the same thing for you. The advice of our Engineering Department is gratis.

WARNER MANUFACTURING COMPANY
25 Main Street, Beloit, Wis.

WARNER
HEAVY DUTY
TRUCK TRAILERS
TWO AND FOUR WHEEL TYPES

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

Mack

TRUCKS



ERNEST
HAMLIN
BAKER

"PERFORMANCE COUNTS"

Power and strength! These two qualities of MACK Trucks impress themselves on all observers. They are the outward indications of that inward perfection of design and manufacture that keep MACK Trucks

constantly on the job. Bodies for all kinds of service and special loading and unloading appliances, too.

Capacities 1½ to 7½ tons. Write for catalogue.

INTERNATIONAL MOTOR COMPANY, NEW YORK

(When Writing to Advertisers, Please Mention the MOTOR TRUCK)



Serviced and Sold in Principal Cities

1 to 10 Ton Capacities

Some Territory is still open

ACASON MOTOR TRUCK CO.

Exclusively Truck Builders

DETROIT, MICHIGAN

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

PLANS FOR GREATER PRODUCTION

GENERAL MOTORS COMPANY IN NEW OFFICE SUITE.

The General Motors Co. is now occupying its new suite of administrative offices at Pontiac, Mich. Quarters for the engineering department include a new drafting room with special overhead lighting.

The new offices are almost too comfortable to leave, but business is business and Vance H. Day, general sales manager of the GMC forces, is on a long trip through the southwest including calls on dealers in Texas and Arizona. The trip is also in the nature of a health tour, Manager Day being a recent influenza victim. Another executive who was forced by business to lose the joys of the new quarters was C. F. Rouze, sales promotion manager, who was at the Omaha truck show during the week of March 1.

NEW ROSS GEAR PLANT.

The Ross Gear and Tool Co. of Lafayette, Ind., has just completed the construction of three large buildings covering several acres, made necessary by the big demand for Ross steering gears, which are claimed to be now installed in 166 of the 250 makes of trucks. The increased facilities will enable the company to boost its production so that ready response may be made to the incessant call for these units.

NEW KEYSTONE TRUCK.

The Keystone Motor Truck Corporation, Chestnut and 42nd streets, Philadelphia, Pa., has appointed M. S. Cooper as sales manager. Mr. Cooper was recently with the Willys-Overland Co. handling quantity sales and formerly in the commercial car division of the sales department. The Keystone Co. is planning the production of a new ton truck to be known as the Keystone truck.

NEW RHODE ISLAND CONCERN.

A new corporation under the title of J. G. McIntosh, Inc., has been organized in Rhode Island to manufacture and deal in motor vehicles in all branches. The capital stock is \$50,000. The concern will be located in Providence. The incorporators are John G., Wilfred G. and J. Truman McIntosh, all of East Providence.

SELDEN AND VIM SERVICES.

Service stations will be opened at Harrisburg, Pa., for Vim and Selden truck owners. The Vim station will be at 17th and Chestnut streets and the Selden at 1336 Thompson street.

Dr. Charles K. Cole, president of A. Schrader Sons, Inc., Brooklyn, N. Y., since 1914, died recently at Pasadena, Cal. He had been active in Montana politics.

LUMBER SUPPLY ASSURED.

The Stoughton Wagon Co., Stoughton, Wis., manufacturer of the "Stoughton" motor truck, has been guaranteed a timber and lumber supply through the organization of a \$15,000 subsidiary corporation, known as the Ozark-Badger Co. Two saw mills at Wilmar, Ark., have been purchased and will supply four or five carloads daily. F. J. Vea, president of the Stoughton Wagon Co., heads the new concern. J. F. Knowles of Wilmar is vice president and will be in charge of the saw mill operation.

COVERT GEAR FACTORY.

A three-story concrete and brick factory building, to cost \$270,000, is under construction at Lockport, N. Y., by the Covert Gear Co., maker of Covert transmission gearsets, clutches and controls. The new structure, which is located at the corner of Lock and Grand streets, will be devoted to the making of gears and will increase the company's output 40 per cent.

NEW COOPERSVILLE PLANT.

A new organization has been formed at Coopersville, Mich., headed by John H. Toravert, to manufacture automobile trucks, bodies and cabs. A building 50 by 100 feet will be erected immediately. The other officers of the concern are: Vice president, L. J. Hinken; secretary-treasurer, William Van Allsburg; manager, Millard Bush.

BIG RELIANCE EXPANSION.

The Reliance Wheel Co., Youngstown, O., is to erect a plant on 30 acres of land recently acquired at Youngstown following a decision to increase the capital stock to 25,000 shares no par common and \$500,000 of eight per cent. cumulative preferred. The new factory will allow big strides in production.

NEW BESSEMER FACTORY.

The Bessemer Motor Truck Co. is to erect a factory and office building at Holmesburg Junction, Pa. There will be three structures, one and two stories, 100 by 400, 100 by 100 and 40 by 100 feet.

NEW TARKINGTON FACTORY.

The Tarkington Motor Co., Rockford, Ill., is engaged in having a new brick factory building, 78 by 500 feet, erected at a cost of \$75,000. It is to be ready by July 1.

BUYS A. B. C. STARTER CO.

The Puritan Machine Co., Detroit, has purchased the A. B. C. Starter Co., manufacturer of electric starting and lighting equipment for Ford cars.

MASTER CARBURETOR IN NEW PLANT.

The Master Carburetor Co. on Feb. 1 occupied a new plant at Main and 30th streets, Los Angeles, Cal., which has many times the production capacity of the old works and is claimed to be the largest carburetor factory in the West. The company is said to be the oldest concern manufacturing carburetors on the Pacific coast. For more than two years the company rejected new business because its output was oversold and devoted itself to old customers. March 1 the company expects that its production will be so increased that deliveries can be made as scheduled. To have outlet for the increased production the company is to establish branches in all principal cities of the country and sales and service stations will be located all over the world.

FORD COMPANY PLANS.

The Ford Motor Co., Detroit, plans building 150,000 trucks this year. Its February output was 12,000. The prices, effective March 4, show an increase of \$50 on trucks. The other Ford increases are: Open models, \$50; enclosed models and Fordson tractors, \$100. The company plans to turn out 100,000 cars a month. The unfilled orders on Feb. 10 were 23,492 cars.

NEW KEWAUNEE COMPANY.

The Kewaunee Machine Co. has succeeded the Marvel Motor Works of Kewaunee, Wis., through a recent reorganization, in which the new interests are represented by Carl Hartmann of Green Bay, Wis. The company will continue to make gas engines and automotive parts, do other commercial machine work and render service on all motor machines.

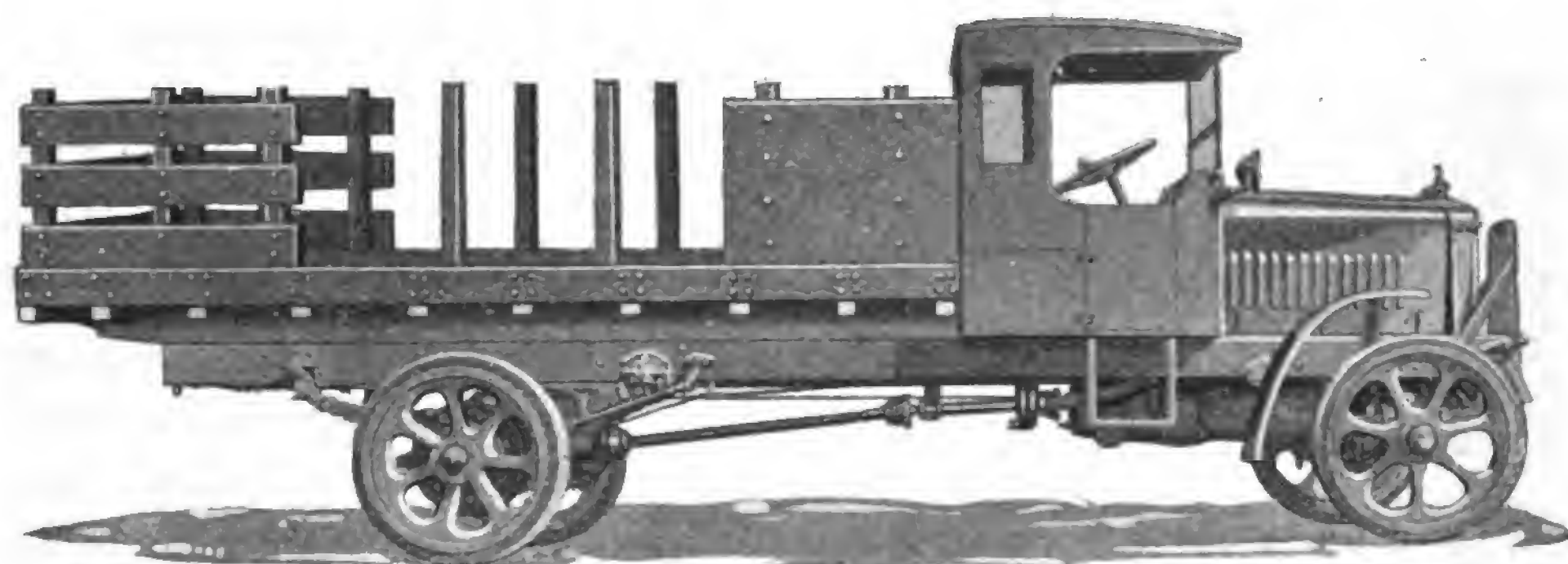
FIRESTONE CANADA PLANT.

The Firestone Tire & Rubber Co. of Canada, Ltd., Hamilton, Ont., has appointed R. H. Jeffers general manager and is making ready to build a mammoth plant with floor space of 320,000 square feet. It will be erected on a 135-acre site to be known as Bartonville. Part of the land will be used for model houses, community halls and stores for the company employees.

GETS CANADIAN FACTORY.

The Mead, Morrison Co., Boston, which recently purchased the plant of M. Beatty & Sons, Ltd., Welland, Ont., will operate it in the future under the name of the Canadian Mead, Morrison Co., Ltd. The latter company has established a general sales office at 285 Beaver Hall Hill, Montreal.

Built to Meet the Demand for Better and Stronger Trucks



Motor truck users, familiar with the causes *determining* their transportation costs, are demanding better trucks.

They are demanding trucks of greater strength for a given capacity rating—more endurance, longer life, more dependable service. These qualities give more ton miles at less cost.

Jumbo trucks are considerably stronger than has been heretofore considered necessary for trucks of the same capacity.

This extra strength is provided not to encourage overloading but to assure greater reliability, longer life, lower up-keep cost.

Hundreds of Jumbo trucks are giving that kind of service under severest operating difficulty. Satisfied Jumbo users are building bigger business for Jumbo dealers.

Write for full information.

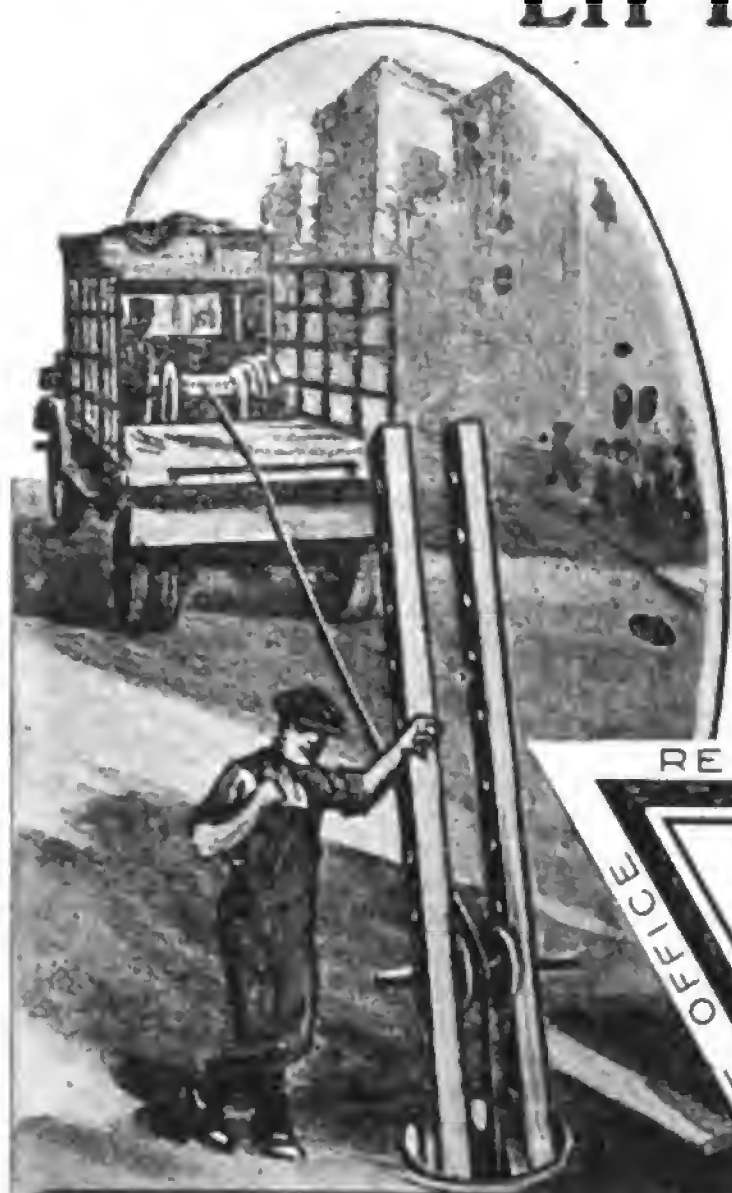
Nelson Motor Truck Company, Saginaw, Michigan



(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

MEAD-MORRISON SERVICE

LIFTS THE LOAD OF INDUSTRY

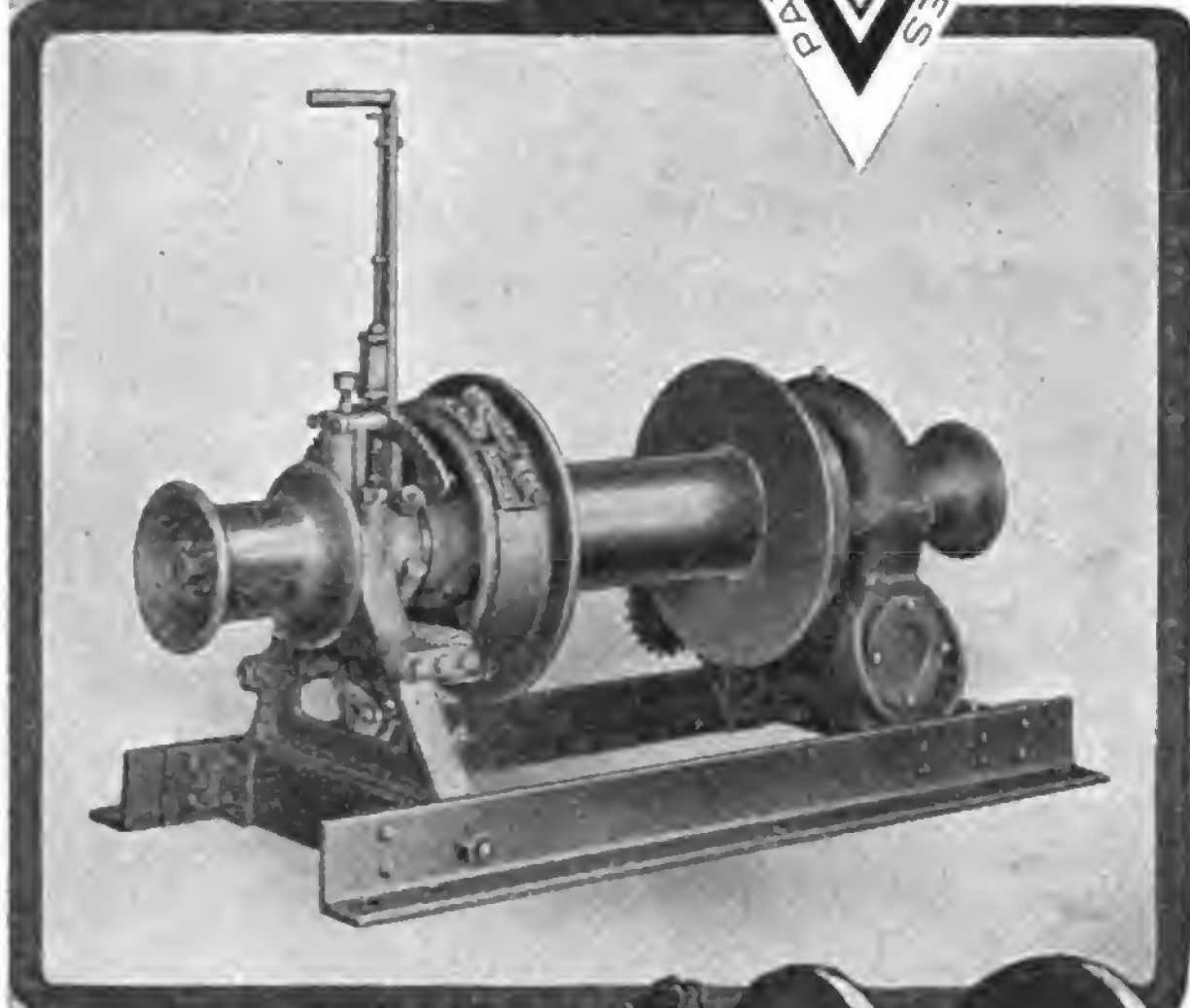


More Productive Hours! Two hours a day—for each man on the truck and the truck itself—over 600 hours a year for each—over 1800 hours when the truck carries two men.

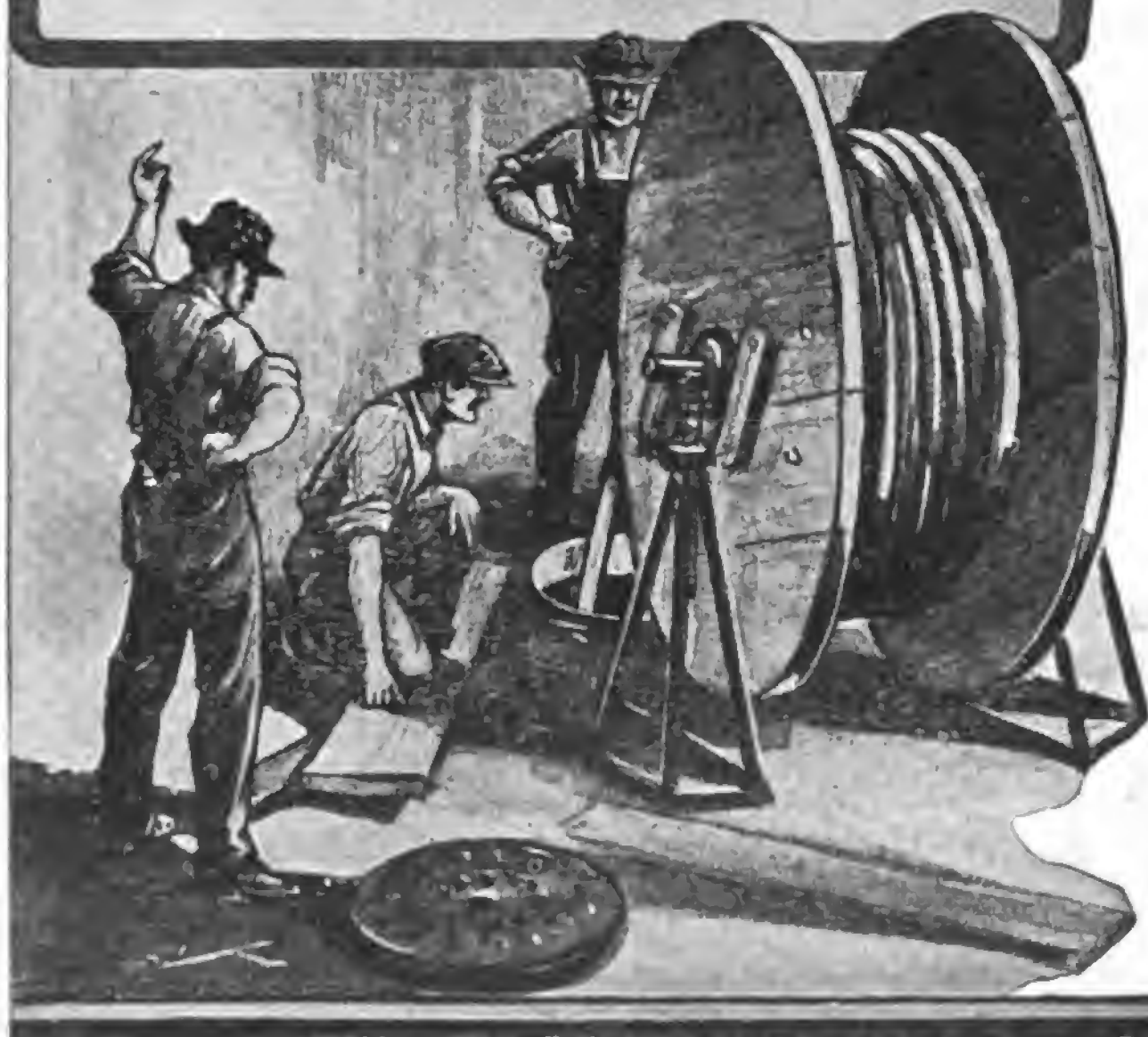
Such is the demonstrated achievement of Mead-Morrison Engineers, proving indisputably that the ideal of Mead-Morrison—to increase the productive hours of industry—is being carried out in a sound, practical way in



MEAD-MORRISON Truck Winches



Both types of Mead-Morrison Winches, the Vertical Capstan and the Friction Drum, have thoroughly demonstrated their practical worth in reducing costs in handling heavy, bulky loads. The Friction Drum Winch shown pulling telephone cable through the conduit is but another illustration of its worth in reducing costs on the "out-of-the-ordinary" job. In this case it actually released five men for other work, and with fewer men made a 50% increase in the amount of cable installed.



The Mead-Morrison Motor Truck Winch folder conclusively proves there is a real saving when you "Let the engine do the work." Send for one.

MEAD-MORRISON
MANUFACTURING COMPANY

323 Prescott Street,

EAST BOSTON,

MASS.

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

Whence comes this extra power?

First—From the proper conception of the daily duty demanded of a truck or tractor engine.

Second—From a design thoughtful of all contingencies of the days work.

Third—Through the workmanlike execution of this thoughtful design in a highly specialized engine plant.

—————The absence of vibration, the insurance against whipping and dis-alignment of the crankshaft, the ample bearing surfaces and positive lubrication, all combine to transmit *all* the power generated into actual driving force.

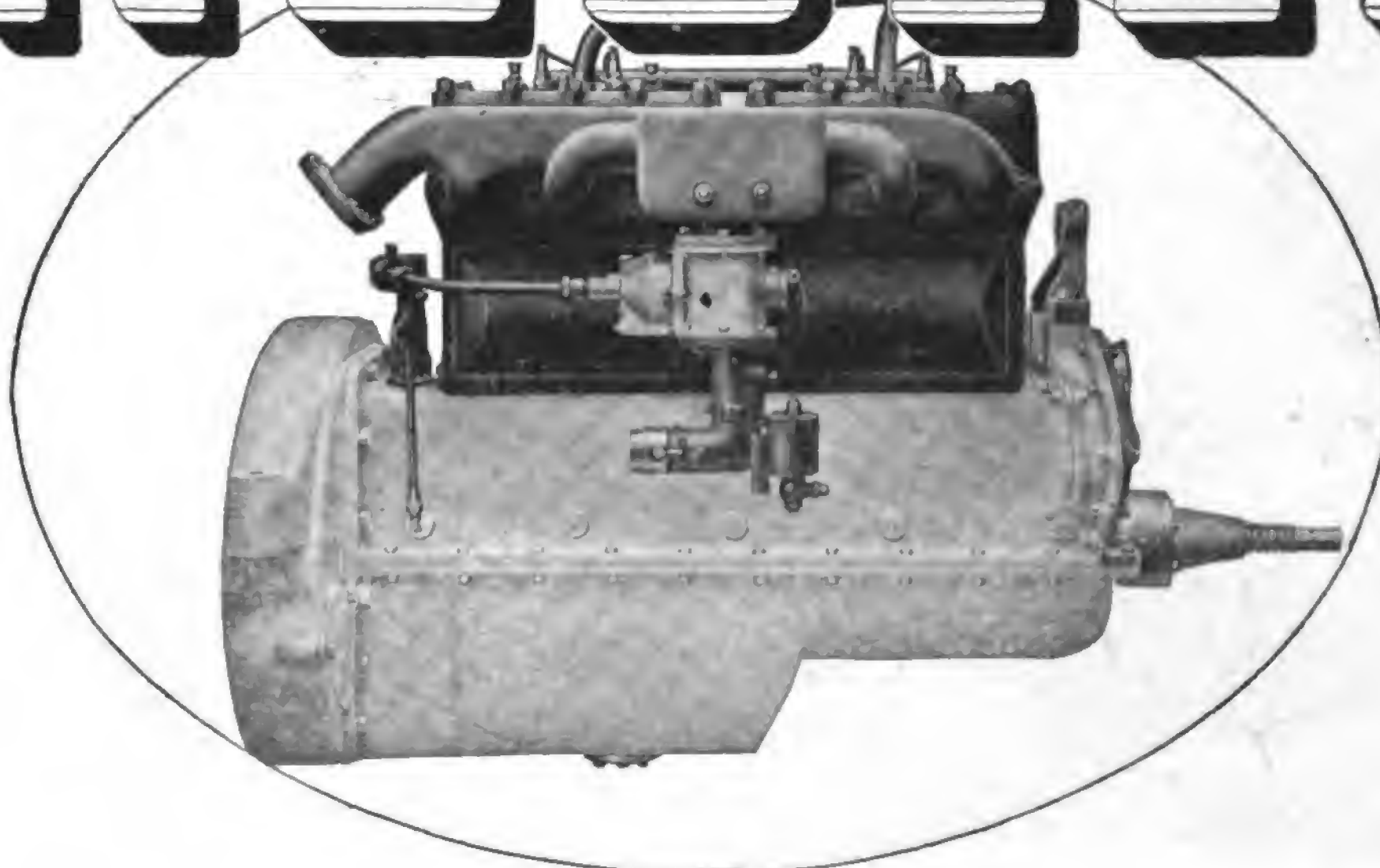
The Hercules Motor Mfg. Company
CANTON OHIO

Sales Offices:

Detroit Chicago Buffalo San Francisco London, England

HERCULES

**For
Trucks
and
Tractors**



(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

INCREASES OF CAPITAL RESOURCES

DENBY MOTOR TRUCK CO. GETS STRONG BACKING.

A. S. Moore, new general manager and president, was entrusted with broad powers at the recent annual meeting of the Denby Motor Truck Co. at Detroit and the addition of men of strong financial standing to the list of directors assures this concern every facility to manufacture and market its product. The new general manager has been assistant production manager of the Hudson Motor Car Co. and has had broad training in every department of the truck industry.

The other officers are: First vice president, Edwin Denby; second vice president, T. M. Simpson; treasurer, E. R. Ailes; secretary, M. H. O'Brien, and assistant secretary-treasurer, H. T. Carpenter; directors, E. R. Ailes of the Detroit Steel Products Co., C. H. L. Flinterman of the Detroit Pressed Steel Co., T. M. Simpson of the Continental Motors Corporation, H. D. Taylor of the McCord Manufacturing Co., President Moore and Edwin and Garvin Denby.

SELLEN TRUCK PRICES UP.

High prices on labor and materials have forced the Selden Truck Corporation of Rochester, N. Y., to announce an advance in prices for its product. The announcement emphasizes the fact that the new prices cover only the actual increased cost to the company and in no way adds to the earnings of the concern.

The "Selden Special," 1½-ton worm-drive truck, is now listed at \$2460 instead of \$2240. Model 2½ A, 2½-ton worm-drive, will sell for \$3550, its former price was \$3290. The model 3½ A, 3½-ton worm-drive, is offered at \$4325, instead of \$3990. Model 5 A, five-ton worm-drive, is listed at \$5770. These prices were effective March 8.

MOTOR WHEEL CORPORATION CAPITAL \$11,000,000.

The reorganized Motor Wheel Corporation of Lansing, Mich., following a merger, is now capitalized at \$11,000,000, and has begun operations. Of the capitalization \$6,000,000 is common and \$5,000,000 preferred. Transfer of stock of constituent companies will require \$3,001,084 of common stock, leaving a surplus of \$3,000,000 unissued.

A combined balance sheet of the four companies merged show assets of \$8,881,027.18. Part of the preferred stock will be sold to provide working capital and get rid of all outstanding obligations. Common stock will be put on a quarterly dividend basis and preferred will probably be eight per cent. with a sinking fund to retire the issue. The consolidation will prove a great benefit from a manufacturing viewpoint and the first year's business of the new concern is counted on to reach the \$12,000,000 mark.

The concerns involved and their net assets follow: Prudden Wheel Co., \$3,408,701.62; Gier Pressed Steel Co., \$1,896,180.12; the Auto Wheel Co., \$648,179.47, all of Lansing; the Weis & Lesh Manufacturing Co. of Memphis, Tenn., \$867,449.13. The three Lansing concerns now occupy adjoining ground.

The new stock will be traded in on the curb until it gets an official rating in the exchange.

The officers of the new corporation are: President, Harry Harper; vice president and treasurer, B. S. Gier; vice presidents, Drury L. Porter and W. C. Brock; secretary, Clarence Carlton; board of directors, William Newbrough, chairman; O. A. Jenison, Charles Nichols, Benjamin Seigfried and the officers. The National City Co., a subsidiary of the National City Bank of New York City, is behind the deal and will take part of the preferred stock.

DEFIANCE SUCCEEDS TURNBULL MOTOR TRUCK CO.

The Defiance Motor Truck Co., Defiance, O., succeeded the Turnbull Truck & Wagon Co., Feb. 1. With this change the company discontinued the manufacture of wagons and its plant is now devoted wholly to the production of trucks.

The Turnbull Wagon Co. built high grade farm wagons for nearly 45 years, but in 1917 the name was changed to the Turnbull Motor Truck & Wagon Co. and a department was established and equipped to build power trucks. Directly following the beginning of operations of this department the War Department requisitioned the plant for manufacture of artillery escort wagons, but the truck department was continued with a greatly reduced production.

Following the cessation of European hostilities the company resumed the production and sale of trucks on a larger scale than was first planned. The growth has been so rapid that with the demands of the truck body department the wagon department production was of necessity reduced in corresponding ratio until its discontinuance was determined.

The name of the truck was Defiance, and at the annual meeting of the stockholders and directors the name of the company was changed to include the trade name of its product, this being especially desirable because of the plan to largely develop production and engage in a national sales campaign.

The officers of the company are: President, Chas. H. Kettenring; vice president, Chas. Behringer; secretary-treasurer, R. Carey May; chief engineer, Harry K. Reinsehl; general sales manager, A. M. Pearson. These officers, with T. T. Shaw, R. P. Kettenring and F. J. Papenhagen, all of Defiance, and Harold S. Reynolds of Toledo, are the directors. The company is amply financed and with its manufacturing experience its operations will no doubt be very successful.

INDIANA ISSUES GOLD NOTES.

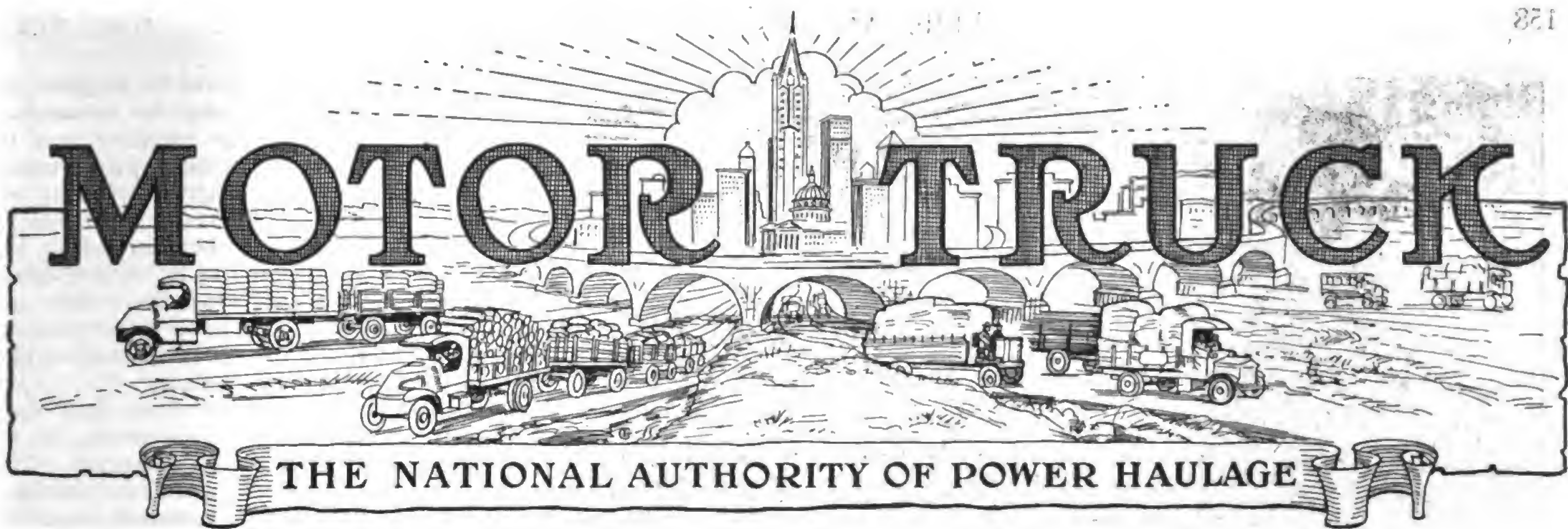
The Indiana Truck Corporation, Marion, Ind., has placed \$500,000 in six per cent. gold notes on the market for the purpose of refunding current indebtedness and providing additional working balances. These notes yield the investor from seven to 7.30 per cent. and mature on dates ranging from March 1, 1921, to March 1, 1930.

NEW WARD LAFRANCE TRUCK CORPORATION CAPITAL.

The Ward LaFrance Truck Corporation, Elmira, N. Y., has received authorization under the laws of Delaware to issue 1,000,000 shares of common stock of no par value. The active capital consists of 10 shares. This company manufactures Ward LaFrance trucks in several sizes.



Kiesel Truck with 1000-Gallon Tank and Street Flushing Equipment, Used by the City of Leadville, Col., with Splendid Results.



VOL. XI. NO. 4.

PAWTUCKET, R. I.

APRIL, 1920.

GOODYEAR MAKES LARGEST LONG DISTANCE TRUCK HAUL

To Insure Akron Factory Against Material Shortage, Ships 400 Tons of Tire Fabrics 700 Miles in 80 Five-Ton Trucks in Five Trains.

AT CONFERENCE in one of the administration buildings of the mammoth plant of the Goodyear Tire & Rubber Co., at Akron, O., a group of anxious officials discussed the afternoon of April 10 the continuance of factory production with especial reference to tire. For a week railroad transportation had been disrupted by a strike and hourly the conditions became worse.

Reports from branches and representa-

tives, supplementing the information of press were considered, and with these statements of department heads relative to supplies of fuel and materials available for plant operation.

The revolutions within the unions of railroad workers threatened to stagnate business and industry. Embargoes had been declared against shipping freight and express. The railroads were directing all energies to operating trains haul-

ing feed, mails and fuel. Some had abandoned transport of materials and products.

The one thing that concerned the officials was continuance of tire production. A survey of the warehouses showed approximately two weeks' supply of fabrics for making tires. This was considerably less than the volume usually in stock, for it had been reduced by practically a week's production with very



The Section of the First Train Loaded at Goodyear, Conn., Composed of Mack Trucks Chartered in New York City, and Driven 175 Miles to Be Freight, Awaiting the Last Units in the Highway Near the Mill.



M. D. Scott, Goodyear Transportation Engineer, at Left, with Superintendent Moore of the Connecticut Cotton Mills, Danielson, Observing the Loading.

small receipts from the mills.

Shortage of Fabric Threatened.

The Goodyear plant employs about 33,000 workers. The output of tires is upwards of 30,000 tires daily, and this is not sufficient to meet the demand. If the works should be closed even for a brief period the production loss would be very large, and this would be reflected in every branch and agency. Obviously, the main object was to produce tires. Shipping tires was secondary, for nothing the company could do would make general distribution possible or practicable until normal railroad operating conditions could be restored.

The greatest activity of the railroad strikers was then between the Mississippi river and New York City. Every system of importance was affected. All the freight houses and terminals of rail and water lines were filled to overflowing, for shippers had sought to send out everything in readiness before transportation was entirely suspended. After the strike had been adjusted the railroads would be congested for a considerable period.

Mills Were Producing to Capacity.

In a number of towns and cities of New England the mills were producing

cotton fabric for cord and fabric tires. Some of them were working constantly to keep up to the delivery schedule. This production was not threatened and at each of the mills there would be accumulations. Reports from these mills was to the effect that no more shipments of products could be made for embargoes for points outside of New England had been declared.

From the viewpoint of the company's officials this was the greatest industrial emergency they had ever faced. The Goodyear plant must have fabric to continue operating, the mills were turning it out to capacity, but transportation could not be obtained.

Between the mills of New England and the Goodyear plant were the highways of the nation, open to all, unobstructed, and traffic over them could move to the limitation of the vehicles. At the beginning of the war the Goodyear company had inaugurated a truck service, hauling fabric from Goodyear, Conn., to Akron, and shipping tires from Akron to various points between that city and Boston. This had been continued during the war and then reduced as the railroad transportation had improved.

So long as the railroads could not car-

ry freight, tonnage could be shipped by truck. It was not a time for measuring cost. If the Goodyear company was to produce without interruption truck transportation was imperative, and the officials decided to undertake what was to be the largest emergency freighting enterprise ever engaged in by an individual concern, and which, from the results obtained, will no doubt have material bearing on the future of long distance highway haulage in this country.

Decision to haul fabric from New England to Akron was, however, by no means a solution of the condition. The company did not own a sufficient number of trucks to carry the tonnage required. Vehicles must be obtained. There was no certain source of supply. To assemble them in the vicinity of Akron and send them East would require time, and time was extremely valuable, to say nothing of the cost. To obviate this delay the trucks must be chartered in some of the eastern cities.

Getting Trucks a Large Problem.

To send the trucks to Akron with full loads was one thing, but the machines must be returned over the road, and if they were to be driven back they should be made to earn a part of the cost. This could be done by shipping Goodyear products to some of the eastern commercial centers. There was no probability that the trucks could carry full loads of tires, for these are too bulky for average bodies, but they could haul capacity freights of other products, shoe soles and heels and mechanical rubber goods.

Yet east bound shipments was not the main object. This detail could be taken up when the trucks arrived at Akron, and there was abundant time to work out this proposition. What was first of all necessary was to start trucks moving toward Akron. There was no organization that could be depended upon to undertake such a contract. The Goodyear company must develop its organization and obtain equipment, and quick work was necessary.

Three Departments Must Do the Work.

When decision was reached to do its own freighting the project was referred to three departments, transportation, fab-



Another Section of the First Truck Train, with the Car of the Goodyear Pilot Who Guided It, Lined in Front of the Connecticut Cotton Mills, Danielson, Nearly Ready to Start.

ric and publicity, and the heads of these were summoned and instructed to leave for the East at once and ship Goodyear fabric as quickly as possible. The transportation department was represented by C. W. Cockrell, who normally would deal with railroads, and by M. D. Scott, who has directed the operation of the Goodyear Boston-Akron truck freight service; the publicity by Carl H. Stubig, and the fabric department by the representative stationed in New England, who divides his time between the mills.

The mills producing fabric for the Goodyear company are the Goodyear mill at Goodyear, Conn., formerly Williamsville, 2.7 miles from Danielson, Conn.; the Connecticut Mills Co., Danielson, Conn.; the Jenckes Spinning Co., Pawtucket, R. I.; the Naushon Weaving Co., and the Passaic Cotton Mills, New Bedford, Mass., and the Ninigret Mills and the Westerly Textile Co., at Westerly, R. I.

The men placed in charge of the undertaking were instructed to gather the men necessary, determine their plans so far as possible before leaving, and to make New York City Sunday, and be in New England Monday morning and start the shipments as quickly as this could be done.

Engaging trucks and organizing the trains was assigned to M. D. Scott, who is known as the Goodyear transportation en-

gineer. Mr. Cockrell was to make the contracts and look after the detail of shopping and distribute the trucks to the different mills after conference with the fabric department's representative, who was to have information of the volume of freightage that was available.

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With knowledge of the roads and the conditions in which the truck trains must be operated, Mr. Scott determined that each group of trucks sent over the road should be led by a pilot, who would be practically in charge, and who would necessarily have a car. The men who could best serve as pilots were those of his own organization who had driven over the regular route of the Goodyear Akron-Boston express, and he hastily summoned the men he wanted, instructed his garage force to make ready a fleet of Packard touring cars, and ordered these men to drive East and to make

those east of Danielson and Goodyear.

But there was no apprehension that there would be confusion in making the Akron-Boston route from any of the points from which trucks might be started.

Up to this point the Goodyear company had acted independently, relying upon its representatives to meet any exigency that might arise. The details of the truck train project could not be determined until the different mill representatives had been conferred with and trucks had been obtained and organized into trains.

To Engage Trucks in New York.

Messrs. Cockrell, Scott, Stubig and their assistants—a considerable group when assembled—left Akron that night. On the train going East the tentative plan was made. A flying squadron was to scour New York City directly after

arrival and engage as many trucks as were needed for the first trains, order these sent over the road direct to Providence, and after this "round-up" the party was to go to Providence, and from that city go to the different mills and learn precisely what was necessary to transport the production of these mills for the Goodyear company to Akron so long as there was need of truck freightage.

On the train Mr. Scott developed his operation of the trucks over the road. The intention was to make daily shipments, and this meant that each division would be made up of trucks loaded at different places that would mobilize at a convenient point on the route, and then proceed as rapidly as road and weather conditions would permit.

A Big Transportation Experiment.

Here emphasis may be made that this undertaking was in the nature of an experiment. Never before had an industry ever attempted highway haulage of freight on such a scale. The United States government had, during the war, sent truck trains from Detroit and other cities to Philadelphia, New York and Baltimore, and last year the Motor Transport Corps made a march from Washington to San Francisco, but these were made by soldiers, with new trucks, with whatever equipment was necessary, and the commands



Loading the Freights of Fabric Must Be Carefully Done to Insure Against Damage: Above at the Connecticut Mills, Working with Hand Truck and Skid; Lower Left, Putting on the Upper Tier of Bales, Each Weighing Nearly a Half Ton; Lower Right, Lowering Bales with Chain Hoist at Goodyear

were thoroughly disciplined. Not only this, quick time was not the principal factor. Again, each train was an independent unit, directed by a commander, who personally could meet conditions as they arose.

There was realization that the roads would be soft and more or less cut from the traffic during the thawing spring weather, that storms were probable and that the trucks could not make as fast time as when the roads are good; that the progress of any train was the speed of the slowest machine, and heavily freighted trucks on solid tires could not be driven as rapidly as the machines had been operated by the Goodyear company.

Assembling Trucks Quickly Imperative.

As there was no knowledge of trucking contractors in New England or the trucks that might be available, decision

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Part of the First Train of Pierce-Arrow Trucks, Chartered at New York City and Driven to and Loaded at New Bedford and Pawtucket, Mobilized for the Start Near the Goodyear Branch at Providence.

was reached to hire a considerable number of machines in New York and send them over the road to Providence, rather than lose the time that might be required to obtain them nearer the mills. There was every reason to make the smallest number of contracts for trucks, and good ground to assume that contractors of fleets with standardized vehicles would be better able to engage in such haulage than owners of one or two trucks, whose experience was limited to comparatively short distances. What was wanted was trucks for the first trains to be dispatched—more time could be given to assembling the others.

When the train reached New York City Sunday each member of the party was assigned a duty, and a fleet of cars mobilized at the Goodyear branch was available for interviewing trucking contractors. Contracts were made for three groups of machines. One was with the Pierce-Arrow Trucking Co., Brooklyn. Another was with Callan Bros., and a third was with the Forwarding Auto Trucking Co. Plans were made so that these trucks were to be sent to Providence as quickly as possible. This meant a drive of 202.3 miles with empty trucks, but the cost of this was regarded as necessary, for time was all important.

Conferences at the Mills.

That night the Goodyear factory party left for Providence, and the morning of the following day Mr Cockrell took up with the first of the mills the tonnage they had in readiness and what could be shipped by trucks. These included the Jenckes Spinning Co., Pawtucket; the Connecticut Mills Co., Danielson; the Goodyear mill at Goodyear, and the Nini-

gret Mills and the Westerly Textile Co. at Westerly. The mills independent of the Goodyear Co. were willing to cooperate so far as possible.

The cotton fabric produced by the mills is woven different widths and its value varies according to the width, considering the piece as the unit. The cloth is either the "duck" used for making what are known as fabric tires, or the "cord" for making cord tires. The former is the solidly woven cloth with the heavy threads in close contact, but the latter consists of longitudinal cords composed of numerous threads, with widely spaced cross threads, that is comparatively loosely woven.

Fabric Must Be Loaded Carefully.

The pieces are woven to approximate lengths in the looms and when removed are wound into rolls and wrapped with heavy water proof paper and burlap. The "fabric," so-called, can be handled or stacked or packed without damage, but the "cord" must be handled with extreme care. It must be placed so the length of the roll is practically level and it cannot be walked on. Subjecting it to any strain might break a thread and a part of it ruined. For this reason "cord" is loaded under the supervision of a representative of each mill, who sees to it that it is so packed that it will be carried without damage.

When the shipping is by railroad the packages of cloth can be securely placed without much probability of change, but loading costly fabric on a truck to be hauled about 700 miles requires unusual care. This precluded rapid loading. Not only this, very few of the mills are so equipped that more than a single truck

can be loaded at the same time. For these reasons the making up of the trains was sure to be comparatively slow.

First Loads at Pawtucket.

The Jenckes Spinning Co., which produces 75,000 pounds of cloth five days a week for the Goodyear company, and more than that volume for other tire manufacturers, was first dealt with. This company has its own truck equipment and rented trucks when others are necessary from the Condon Trucking Co. of Pawtucket. As no trucks could arrive from New York that day decision was reached to make up a train of such machines as Mr. Condon could assemble and start it the next morning, the original intention being to send it by way of Goodyear, and there load whatever fabric was ready, some of the trucks to be dispatched empty as far as Goodyear.

Nine trucks were loaded that night and the next morning these and five empty trucks were started from Pawtucket. At Providence one of the loaded trucks was rejected and sent back to the mill to be unloaded, and the contracts for the five empty trucks were cancelled and the first group of eight trucks departed for Akron via the "Shore Road" from Providence. This train started in a drenching rain and there was a good deal of organization detail necessary before the trucks got away.

All Trucks Five-Ton Units.

The trucks accepted for the work were nothing but five-ton units, and while many men offered to haul five tons on 3½-ton trucks, these offers were rejected. Only five tons was carried, even if the truck was of greater capacity, and



A General View of the Tire Fabric Mill at Goodyear, Conn., Formerly Williamsville, in the Town of Killingly, One of the Sources of Material Supply Operated by the Goodyear Tire & Rubber Co.



A Group of the Houses Erected at Goodyear Expressly for Employees of the Goodyear Mill and Rented for Nominal Weekly Payments.

after the loads were on the machines there were papers to be made out, insurance to place, the drivers had to have money enough to defray their own expenses and the trucks were carefully examined to learn if they were mechanically in condition for such a trip.

As each truck accepted was loaded with approximately 10,000 pounds of fabric, worth about \$2.30 a pound, having a gross valuation of from \$23,000 to \$25,000, and this was insured against fire, damage of different kinds, theft, etc., much care was taken in covering and protecting the bales against every probable source of danger.

Operating Center at Providence.

The Goodyear truck train organizers made headquarters at Providence, where a Goodyear branch is located, and practically in the center of the group of mills. The trucks from New Bedford and Pawtucket of necessity passed through that city, and Westerly is on the main highway to New York.

The first of the New York trucks reached Providence late Tuesday night, having left the metropolis at 7 o'clock Monday evening, and doing the 210 miles from Brooklyn in slightly more than 24 hours. This included the machines of the Pierce-Arrow Trucking Co., and these were sent out with some knowledge of the needs of long distance haulage. One of the trucks carries four extra springs, an extra clutch, a spare steering gear and numerous small parts, as well as a well equipped tool box, and an expert mechanic was in charge. When he reported to the Goodyear branch the driver in charge wanted a load for the truck that would, including the spares and tools, bring it up to the five tons each was supposed to carry. He said that he was to see the other trucks through and he purposed to do so if he went along light.

Assembling the Second Train.

Of this group of trucks six were loaded at Pawtucket, 12 were loaded at New Bedford and two at Westerly. Because of the necessity of sending the trucks in trains, and the trip to New Bedford and loading there required practically an entire day, the start of the second train from Providence was not until Thursday morning, although the machines

could have been sent away the afternoon before. There was reason to believe, however, that the trucks would do better if the driving on comparatively strange roads was done by daylight, and again there was no probability that the drivers would reach a place where they could find hotel accommodations nearer than Westerly.

The first train from Goodyear and Danielson loaded at these two places on Wednesday. This was made up of 20 Mack trucks, chartered from Callan Bros., New York City, which were accompanied by a small truck loaded with tools, spare parts and such equipment as might be needed during a long trip, and by a touring car driven by one of the owners. This group of machines was selected with care from a big fleet in New York and the repair or emergency truck was taken because there was no knowledge of the possibilities of servicing, and good judgment dictated that provision be made for any eventuality.

Ten trucks were loaded at Goodyear and 10 at Danielson, and the start was made early Thursday morning. The fact that the trucks were all one make was expected to facilitate adjustment or repair should these be necessary. So far as preparation was concerned the machines had been carefully inspected and were in good condition for the long drive

and the member of the concern owning them who accompanied the train in his car maintained that he would make good time.

Fourth Train Loaded at Goodyear.

The fourth train was made up of 20 White, Packard and Mack trucks, which had been chartered at Boston and reached Providence in several groups Thursday and early Friday, and these were sent to Danielson and Goodyear, where 10 were loaded at each of the mills. These machines had been carefully selected and several of them were new. While the servicing was regarded as somewhat more difficult than a train of trucks of one make, and they were not accompanied by a repair truck, Mr. Scott believed the outfit was in good condition to undertake the drive. The start was made Saturday morning.

The fifth train was made up of 12 trucks of miscellaneous makes, including Macks, Whites, Packards, Pierce-Arrows and an Acme machine, and nine of these were loaded at Pawtucket and the other three were sent to Westerly for loading. The nine trucks of the train started from Providence Saturday afternoon at 4 o'clock, and made Westerly that night, and with the three loaded in that town left Sunday morning.

Freightage for Extra Trucks.

A train of 13 trucks chartered in New York that arrived in Providence Thursday evening, composed of machines of several makes, which would have been sent out as quickly as cargoes could be loaded on Sunday, was held because of the seeming improvement in railroad transportation, and was later ordered to Goodyear to load cotton yarn to be hauled to the John H. Myer Co., Waverly, N. J., near Newark, this plan of operating giving the machines loads for the return trip to New York City, while arrangement was made for two of them to make trips from Waverly to Goodyear, each hauling a load of machinery.

One will note that between Tuesday morning and Saturday afternoon the Goodyear traffic department started five truck trains, all five-ton machines, each loaded to capacity and carrying an aggregate of 800,000 pounds of tire fabric, valued at \$2.30 a pound. Assuming 10,000



A Five-Ton Mack Truck of the First Goodyear Train Fully Loaded with 23 Bales of Fabric 90 Inches Wide, Before Lashing and Covering with Tarpaulin.



Inspecting Each Truck for Mechanical Condition Before the Start Was Carefully Done to Insure Against Failure and Delays While En Route.

pounds of fabric to a load, which is as near an estimate as is practicable, the total shipments had a valuation of about \$1,840,000, which far exceeds the value of any truck fleet freighting ever made for any concern.

How the Trains Were Organized.

The organization of the trains was planned by Mr. Scott with a broader knowledge of highway haulage than is possessed by most men. Each truck after loading was given a number to indicate its place in the train formation, and it was expected to maintain that place throughout the drive, accident being the only reason for failure to do so. If an owner accompanied his trucks he was appointed a group foreman, in charge of his own trucks, and he was expected to ride on the last truck and keep his machines together and ahead of him. If the trucks were each in charge of a driver one of these was given the same authority. The men in charge of the several groups of each train were responsible to the Goodyear pilot, who drove ahead in a touring car and who had specific instruction relative to every detail, and could communicate with the Goodyear traffic department by wire or telephone. If the trucks of a train were owned by one concern it was divided into two divisions, with a foreman in charge of each.

The orders were for the trains to keep together and not to continue in the event of a truck falling unless ordered to do so. Should repairs be necessary they were to be made and the other trucks held until all were in readiness to start again, for the object was to maintain the organization of each train throughout the drive.

Train Pilot Directed Movements.

The pilot of each train was ordered to move with the trucks, seeing to it that they were driven carefully, that all orders were obeyed, making arrangements for the meals and hotel accommodations for the men in each place a night stop was made, arranging for gasoline, oil and other supplies, for repairs or the like. The pilot also determined the length of the day's run and the time for starting

and stopping. He was also required to see that the trucks and their loads were well guarded at night and that the loads were protected from storm. As each truck and its freight was worth close to \$30,000, the responsibility of the pilot was such as to insure his constant attention.

When each train was dispatched the pilot impressed the drivers with the necessity of obeying orders implicitly. The trucks were expected to be kept 100 feet apart while driving. Especial care was urged when making descents. Signals were decided on to indicate conditions of the trucks should there be need for stopping. All the drivers were to help a truck crew that needed assistance. The pilots were instructed to observe the road ahead of each train and to see that the drivers were advised of conditions that required cautious driving.

The pilots were expected to do all the driving by daylight, save in the event of emergency. An accident might mean large damage to a freight of cord fabric and there were no need of taking

chances unnecessarily. The mileage to be made was left to the judgment of the pilot, but they were given 100 miles "to shoot at," and progress was somewhat dependent upon reaching places where hotels and garages were available.

The Actual Haulage Mileages.

The longest distance the trucks were to be driven was from New Bedford to Akron, and the shortest from Westerly to Akron. The distances, as determined by route book mileage, were as follows:

	Miles
New Bedford to Akron.....	746.8
Pawtucket to Akron.....	718.3
Providence to Akron.....	713.8
Goodyear to Akron.....	680.3
Danielson to Akron.....	677.6
Westerly to Akron.....	657.5

But these mileages do not represent the full distances the trucks will be driven to make delivery at Akron and return. For instance, the trains of Pierce-Arrow and Mack trucks were driven from New York, some of the former to New Bedford, some to Pawtucket and some to Westerly, while the Mack train went direct to Danielson and Goodyear. Other trucks were driven from Boston to Goodyear and Danielson and others to Westerly. Then to the outward mileage as indicated above must be added the following:

	Miles
New York to New Bedford.....	235.3
New York to Pawtucket.....	206.8
New York to Danielson.....	146.1
New York to Goodyear.....	148.8
Boston to Providence to New Bedford	78.0
Boston to Providence to Pawtucket	50.0
Boston to Danielson.....	71.4
Boston to Goodyear.....	74.1
Boston to Westerly.....	101.3
N. Y. to Providence to Goodyear....	231.4
N. Y. to Providence to Danielson..	228.7

Paid a Flat Price a Mile.

When the trucks were chartered the owners were to be paid on the basis of



The Last Work Before the Start: Securing the Cover to Protect the Load Worth Nearly \$25,000, and Filling the Engine Reservoir with Oil.

miles driven, and they were assured of capacity loads returning. The New York trucks would probably be freighted for that city and vicinity, the distance from Akron via the Lincoln Highway being 511.5 miles; the distance from Akron to Boston is 745.5 miles, and the distance from Akron to Providence and Pawtucket 713.8 and 718.3 respectively. The cargoes to be shipped will be for delivery as close to the places where the trucks are owned as is possible to send them.

With reference to the places where the trucks were loaded, the following data is interesting:

	Trucks
Pawtucket	23
Goodyear	20
Danielson	20
New Bedford.....	12
Westerly	5
Total.....	80

The progress of the trucks was followed very carefully by the traffic department of the Goodyear company, each pilot making report by telephone or night letter to Providence, and later on to the Goodyear factory at Akron, giving the mileage and the condition of the trucks, the weather, mishaps and the prospects. Each truck was identified by its number.

All Trains Making Good Progress.

Sunday, April 18, the first train was climbing the Tuscarora mountains near Buckstown, Pa., and the second train, which had started 48 hours later, was but six hours behind. The evening before the third train was at Trenton, N.

J., and the fourth and fifth trains had left Stamford, Conn., and Westerly, R. I., Sunday morning. The fourth train was delayed at Stamford by an accident that necessitated a repair of a truck, losing a few hours.

Mr. Scott, organizer of the truck trains and under whose direction they are being operated, stated that he expected the drivers would have the hardest driving climbing Tuscarora, there being a long ascent in the vicinity of Ligonier, Pa. On the eastern slope of the mountain there is one place where for about 50 yards the trucks have to climb an 18 per cent. grade, which is the steepest that must be ascended. Along this section of the Lincoln Highway, between Chambersburg and Greensburg were located two Goodyear men with touring cars, who were referred to as "missionaries," who were instructed to meet each train and afford whatever assistance was necessary in crossing the mountains. When the last train came on the "missionaries" were to follow it into Akron.

Probable Drives of the Trucks.

The drives made by the trains were more or less dependent upon the weather, but the expectation was that a train leaving Providence would make New London, Conn., the first day, a run of 74.5 miles; Newark, N. J., the second day, 140 miles; Coatesville, Pa., the third day, 124.4 miles; Chambersburg, Pa., the fourth day, 103.9 miles; Greensburg, Pa., the fifth day, 122.8 miles, and Akron the sixth day, 148.2 miles.

A train leaving Goodyear or Danielson might make New Haven, Conn., the

first day, 93.8 miles; Trenton, N. J., the second day, 138.4 miles; Lancaster, Pa., the third day, 99.7 miles; Harrisburg, Pa., the fourth day, 105.2 miles; Pittsburgh, Pa., the fifth day, 123.2 miles, and Akron the sixth day, 120 miles.

The time to be made by the trains with trucks shod with solid tires and driven only by day could not be comparable with the time of the Goodyear Akron-Boston express, which was established in April, 1917, and which operated trucks of different sizes equipped with pneumatic tires. These trucks were driven by two drivers, day and night, and stops were only made for fuel, lubricant, water, meals and necessary adjustment or repair. The round trip of from 1480 to 1490 miles between the two cities, hauling tires to Boston and returning by way of Goodyear, Conn., and taking on a load of tire fabric, which was hauled to Akron, has been made in 110 hours, but the average time was 5½ days, depending upon the weather and the road conditions. At one time eight trucks were in this service, but six of these have been diverted to other uses, and two of them are still driven over the route.

The resourcefulness of the Goodyear organization in organizing and dispatching truck trains overland attracted much attention in New England, and along the route traversed. At the Providence branch of the company, when the railroad and express embargoes were in effect, the company had numerous applications from concerns who wanted to engage the trucks to haul tonnage for them from the west to the east, assuring the trucks would return unloaded.

44 BUSES IN LOUISVILLE.

The Kentucky Automobile Transportation Service Co. is starting operations this month in Louisville, an auxiliary transportation system with 44 buses, each with capacity for 50 passengers. The fare will be five cents and transfers will be issued. Only white passengers will be transported. Liability insurance will be carried. Double-deck equipment will be used in the summer.

J. L. Blerach, vice president and treasurer of the company, says that 100 buses will be running by fall. The company will operate as a private corporation without a city franchise and officials declare it is not fighting the Louisville Railway Co., but is filling a much needed want. It is planned in time to have all buses "loop" in the business district.

A SIX ROADWAY TUNNEL.

Though the New York and New Jersey Tunnel Commission has accepted the report of its engineers calling for a twin tube four roadway type of tunnel under the Hudson to New Jersey, there has been more or less dissatisfaction expressed by individuals and organizations. The Broadway Association met at the Hotel Astor April 8 and adopted resolutions calling on the governors and legislatures of the two states to consider the building of a concrete tunnel with six roadways.

Ask Highway Plank in Political Platform of All Parties

The Republican and Democratic national conventions will be asked by the Federal Highway Council, representing the transportation interests of the country, to put themselves on record for a national policy favoring highway development.

The platform builders will be urged to declare for the enactment of national highway legislation, providing for the construction and maintenance by the Federal government of a national system of highways, creating a Federal Highway Commission to supervise the work and in 1921 make an additional appropriation for the continuation of federal aid.

AUTOMOTIVE TRADE BODY FORMED IN ILLINOIS.

An Automotive Trade Association was organized in Illinois at a meeting held in Springfield, March 22-23. It includes every branch of the industry. The National Automobile Dealers' Association assisted in the work of organization by sending invitations to manufacturers and jobbers. It is the first trade association in the state, although there are several dealers' organizations.

ONE GALLON OF GASOLINE TAKES THE PLACE OF THREE.

Getting three miles out of the volume of gasoline which was previously necessary to run one is the gain made in exactly 12 months through a cost record system established for a Packard truck by the Consolidated Fruit Jar Co. of Brunswick, N. J. This system covers wages, gasoline, oils, tires, repairs and depreciation.

The improvement in gasoline saving was gradual during the year. The time required to load the truck was reduced from 21 to 14 minutes. The cost per ton of transportation and the cost per ton mile decreased one-half.

Figures on the running of over 1700 trucks in the 1919 test by the Packard Motor Car Co. show that during the first six months of the contest an average saving of 10 per cent. in gasoline was made.

GOOD ROADS WOULD SAVE NATION 11 BILLIONS ANNUALLY.

Based on a statement from the United States Department of Agriculture, Bureau of Public Roads, that the users of good roads in Milwaukee county, Wis., benefit \$25,000 a day, experts have shown that good roads throughout the nation would save the nation nearly 11 billions annually, more than one-third the cost of America's participation in the world war.

PERKINS IS LEWIS-HALL MOTORS PRODUCTION MANAGER.

Established in a new plant the Lewis-Hall Motors Corporation, Detroit, manufacturer of Hall trucks, now entirely separate from the Lewis-Hall Iron Works, of which it was originally a division, has now factory facilities and equipment for construction on a large scale, and its organization has been developed with the object of building and selling machines to meet whatever demand may be created.

The company purposes to be an important factor in the industry and the plant and sales personnel has been carefully selected. Typical of the makeup of these organizations is the appointment of John Perkins as production manager, who has had exceptional training and experience as a manufacturer and has been executive of some of the largest concerns of the industry. He was first connected with the Brown & Sharpe Manufacturing Co., Providence, where he gained broad knowledge of the manufacture of fine tools. Later he organized and equipped a plant for the DeLaval Separator Co., was associated with the Mack Bros. Motor Truck Co., and the Saurer Motor Truck Co., and later was with the Russell Motor Car Co., Toronto, Ontario. He retired from this connection to become superintendent of the truck division of the Packard Motor Car Co., Detroit, of which he was in charge during the activities of the war. He will devote his energies and his knowledge to production and expansion of Lewis-Hall factory.

NEW JERSEY CLUB GROWS.

Frederick R. Hall, manager of the Ship-by-Truck Bureau of the Firestone Tire Co., was one of the speakers when "Tires" was the subject of general discussion and several addresses at a recent meeting of the Motor Truck club of New Jersey. He explained the purposes of the bureau and its readiness to cooperate with the Truck club. Eighteen new members were added at the meeting and the club is rapidly growing to be a power in its field.

The Dayton-Dowd Co., Quincy, Ill., builder of "Leader" farm tractors, has made contract for Elsemann magnetos as standard equipment for its machines.

Orchard Sprayer Is Latest Republic Equipment

A power driven orchard spraying equipment, designed for installation on a 2½-ton chassis has been developed for the Republic Motor Truck Co., Alma, Mich., which is the first apparatus for this service produced for the power truck industry. The possibilities for sales of power orchard sprayers led to designing the unit, and in tests it has been found to be extremely practical and economical as compared with other types of apparatus.

The chassis is a standard type with a power take-off at the transmission gear-set. On the rear of the chassis on bolt-ers is mounted a 600 gallon tank with connections for attaching four lines of garden hose. The tank is claimed to be self-filling, self-agitating and self-cleaning.

The pump is a Northern rotary with capacity of 30 gallons a minute against 300 pounds pressure, and the excess capacity not used at the hose nozzles is pumped back into the tank through jets at the bottom, these jets thoroughly mixing the spraying solution. The pump can be driven while the truck is moving or standing and the pressure can be removed at the 300 pounds maximum under all conditions.

The spray thrown is exceptionally fine, which means an economy of the spraying solution, and it can be thrown in any volume while the machine is driven through orchards at slow speeds. The tank and its fittings are easily removable should the chassis be required for other work, and any type of body may be installed.

A Republic sprayer was recently demonstrated at the 1200-tree apple orchard of the King farm, two miles from Scranton, Va., using a solution of lime and sulphur. With one man driving the truck and two using the spray guns the trees were sprayed at a rate of about 150 trees an hour. The capacity of the machine was equal to all expectations and the equipment will be produced in number to meet a demand for what is believed will be a necessary utility, not only in orchards, but crops of all kinds that are infested with destructive insects.

NATIONAL CHAMBER ACTIVE ALONG MANY LINES.

Current activities of the National Automobile Chamber of Commerce include:

Plans for supplying 10 trucks for use by the engineering division of the National Research Council in an investigation to determine a basis for economical grades on rural highways.

Expansion of the rural motor express movement by the formation of the National Association of State Marketing Officials with membership from 20 states.

Operation of approximately 4000 motor express lines in 48 states, covering routes from six to 250 miles long and using from one to 20 trucks.

Requests from universities for details of engineering courses in highway transportation.

Survey by Department of Agriculture of motor trucks on the farm, showing more than 50,000 now in use.

Attendance by members of truck division of N. A. C. C. at hearings on truck line franchises in various states and an educational campaign to demonstrate the advantages of truck use.

WORLD ROAD CONGRESS MAY MEET IN UNITED STATES.

The United States, the only civilized nation not a member of the Permanent International Association of Road Congresses, is at last seeing the light and is likely to join. The Secretary of Agriculture has a recommendation to that effect from the executive committee of the American Association of State Highway Officials. The Roads Congress, an international tribunal for bringing together the best experience and results in highway construction and administration, will probably be asked to meet in the United States.

ONE LICENSE FOR ALL STATES.

A bill is being considered by the Senate Interstate Commerce committee which would provide that an automobile which complies with the registration laws in its own state can travel unrestricted in any state.



Orchard Spraying Equipment Mounted on Republic Chassis: At Left, Four Streams Are Practical at One Time; at Right, the Tank and Fittings Are Demountable and a Body of Any Other Type Can be Used.

AUTO STAGE BUSINESS GOING STRONG IN CALIFORNIA.

The Firestone Ship-by-Truck Bureau is authority for the statement that more than \$1,500,000 has been invested recently in big motor busses by business men in Los Angeles county, Cal., and that last summer more than 1500 auto stages were in operation in the state, rolling up a mileage of 225,000 daily.

California is taking the lead in this business because of her splendid system of hard surfaced highways. The stages are not replacing railroad service, being licensed by the state railroad commission because the railroads cannot handle the passenger traffic. One company is operating 70 vehicles out of Stockton and it is estimated that 2500 people reach and leave Oakland daily by auto stage.

SHIP-BY-TRUCK WEEK.

At least 60 cities are reported to be making arrangements to observe Ship-by-Truck Week, which is set for May 17-24. This project has been indorsed in proclamations by eight governors. Parades will be held at some points and in others there will be endurance runs and demonstrations of how farm produce and other freight can be speedily and economically handled by motor truck. The movement is designed to educate the public in the worth of the truck as a transportation medium.

Plans also include essays by school children, sermons and the distribution of literature, all intended to arouse interest in a national programme of highway construction.

TRUCKS SUCCEED RAILROAD.

The suspension of operations by the Kansas City Northwestern railroad has brought motor trucks into use along the route formerly traveled by the road and they have proven a most satisfactory substitute. Two trucking lines make daily trips to Tonganoxie from Kansas City, doing contract hauling for merchants and farmers. Foodstuffs and other merchandise are taken to the towns along the way. A large share of the live stock marketed in Kansas City is brought in by trucks.

TRUCKS TO TOUR OHIO.

A tour of trucks throughout Central Ohio is planned for the week of April 19 under the auspices of the Columbus Automobile Trade Association. Stops will be made and demonstrations given at each of the towns visited. At least 15 trucks will participate.

THE GOODYEAR POSTOFFICE.

The Goodyear Tire & Rubber Co., Akron, O., with from 15,000 to 18,000 letters coming and going in a day, handles as much mail as the postoffice in a city of 30,000 people. This company receives and sends out nearly 6,000,000 pieces of mail in 12 months.

Real Representative Transportation Committee

The Transportation Committee, formed at Washington, April 5, will represent the manufacturer, owner and the public in coordinating highway transportation with the other transportation agencies of the nation, and its organization is believed to be one of the most forward steps taken in recent years. The development of highways and the stimulation of their use to bring down the cost of living are among its objects.

Congressman Esch, chairman of the Interstate and Foreign Commerce committee, and Senator Townsend, chairman of the Senate committee on Postoffice and Post Roads, and author of the Townsend Highway bill, were among the speakers. The latter detailed the advantages of his act in the general scheme of highway improvement. Long distance hauling by relays of trucks was one of the forecasts made by Congressman Esch, who also expressed the conviction that rural transportation routes will go far to relieve the farm labor problem.

The Transportation committee outlines its aims as follows: To visualize future highway transportation requirements; to cooperate with the railroads, waterways and other agencies of transportation, to the end that the public may enjoy that form of transportation which is most efficient, economical and practical; to study the problems attending the entrance of the motor truck into our daily life in order that we may assist the industry which is industrially great and financially strong, in its effort to be economically right; to encourage the establishment of motor express lines, where such lines will give a fair return to the investor and serve a useful purpose to the community; to promote uniform legislation and encourage every movement for the safety of life and limb on our streets and highways; to gather such information and statistics as will be a guidance to those interested in determining the economic field for highway transport, and act as a clearing house for the dissemination of the same.

THE MARCH "HORSE SENSE."

A two-page center spread story, describing the new Standard All-Steel oil tank, is the feature of the March "Horse Sense," the monthly house organ of the Traffic Motor Truck Corporation. Many illustrations of the Traffic truck in operation are shown.

A BAD STATE PRACTISE.

Many proposed state laws provide that interest on highway bonds be paid for out of motor vehicle fees, a practise which automobile men should discourage as the roads benefit everyone. The use of these fees for maintenance is approved.

PUTTING UP LEGAL BARS TO USE BUSSES IN NEW YORK.

The installation of municipal bus lines in New York City is facing a number of snags, most of them of a legal nature. One suit to restrain the use of these vehicles by the city is charged by Mayor Hylan as a move by the "traction interests" to shut off competition. Another suit has been begun to determine the legality of privately owned lines operating in the streets in opposition to street cars. The buses now in use, except those of the Fifth Avenue Coach Co., have not secured franchises or even bothered to get the approval of the Public Service Commission.

Meanwhile the city is going forward in its plans to buy 200 buses, each seating 30 people and providing standing room for as many more. Tax notes for \$1,140,000 are being issued to defray the expense.

TECHNICAL BOOKS FOR WORKERS.

The B. F. Goodrich Co., Akron, O.; the Studebaker Corporation, South Bend.; the National Automobile Chamber of Commerce and the General Electric Co., Schenectady, N. Y., are among the leading corporations of the company which have installed in their plants or places of business special libraries of technical books for the use of their workers. From such libraries the employee may obtain books giving the most minute information upon the industry in which he is engaged and such books are in demand during the lunch hour and for home reading.

The American Library Association, 24 West 39th street, New York, which supplied 7,000,000 books to men in service during the war, is behind this project, which is bound to be taken up on even broader lines.

TRUCKS BEFORE ELECTRICITY.

Robert S. Stewart, vice president of the United States Motor Truck Co., Cincinnati, is authority for statistics which show that farmers must have motor trucks, even ahead of the so-called modern conveniences. One investigation revealed that 88 per cent. of the farmers in a certain district used motor trucks or automobiles and only seven per cent. had electric lights, only seven per cent. chemical toilets and only nine farmers had bath tubs. Stoves were used for heating in four-fifths of the homes and only 39 per cent. had water in the house.

PITTSBURGH AUTO SHOW.

Pittsburgh's 20th annual automobile show, held March 20-25, at Motor Square Garden, under the auspices of the Automotive Association, Inc., drew many exhibitors and big crowds and was a success from every angle. There were 77 exhibits of cars and 54 of accessories. The demand for floor space forced the management to equip a sub-floor at an additional cost of \$10,000. Six manufacturers were unable to exhibit because of lack of space.

Trains of Trucks and Trailers for Long Haul Routes

The running of trains of trucks and trailers on the highway as frequently as trucks are seen today is a future happening that E. Farr, director of the Firestone Ship by Truck Bureau, makes bold to forecast. Mr. Farr bases his calculations on reports received from 65 trucking centers.

The Firestone prophet cites the fact that on level roads the trailer can reduce operation costs from 20 to 40 per cent. The coming of good roads means a more general use of the trailer. As railroad freight cars are multiplied to reduce the cost of transportation, so will the trailers, he points out.

CANADA TO BUILD ROADS.

Canada's big road building programme, which has just been started, will be of especial benefit to the farmer, as 60 per cent. of the 325,000 motor cars in that country are registered in rural communities. Canada will spend \$50,000,000 on roads, of which \$20,000,000 will come from the Dominion treasury and \$30,000,000 from the nine provinces.

WHEELING AUTO SHOW.

Over 30,000 people attended the automobile show of the Wheeling Automobile Dealers' Association, March 11, 12 and 13, at Wheeling, W. Va. Sales of higher priced cars attested to the prosperity of the district. Dealers expect to double last year's sales. Interurban freight transportation has caused a heavy call for trucks.

PITTSBURGH SECTION OF S. A. E.

Because of the large number of automotive engineers now located in Pittsburgh, a movement is under way to form a Pittsburgh or Western Pennsylvania division of the Pennsylvania section of the S. A. E. Interest in the project was stimulated by a recent meeting of 50 members of the Pennsylvania section in Pittsburgh.

F-W-D CO., ESTABLISHES SCHOOL OF INSTRUCTION.

The Four Wheel Drive Auto Co., Clintonville, Wis., builder of F-W-D trucks, has inaugurated a plan to develop the efficiency of its service to truck owners that has necessitated the increase of the scope of its school for instruction at its plant. Every male employee in the office of the company, regardless of his duties, is required to complete a course, and the classes, which were formerly made up almost entirely of service men, now include bookkeepers, clerks, stenographers, etc.

The executives of the company are convinced that thorough individual knowledge of the principles of truck construction and practical experience assembling and disassembling the components of F-W-D trucks are essential to expedite the work of each compartment in its relation with other departments, and will ultimately benefit the owners of the vehicles built.

The employees during the course of instruction are paid as when engaged with their regular work. The period of work is approximately three weeks for each class, during which time driving and the mechanical construction of the machines are studied under competent instructors. Each student is required to do the actual work of fitting each unit and assembling a complete truck. Besides this there are lectures and these deal with practical adjustment and repair and maintenance. The company requires all dealers to each send a service man to the school for thorough training in the factory methods for using and servicing F-W-D trucks, that the owners shall have the benefit of uniformly trained workers.

10,000 AT UNIONTOWN SHOW.

For the first time in the history of the city a joint show was held at Uniontown, Pa., last month and it was an emphatic success, over 10,000 people attending. There were 30 exhibits of leading cars and equipment. Decorations were appropriate and there was music and other features. The success of the event means an annual show for Uniontown.

Goodyear Will Build Dirigibles at Big Field

The Goodyear Tire & Rubber Co. has the distinction of possessing the largest privately owned aviation field in this country through the recent acquisition of Wingfoot field at Akron, O. The plans which the Goodyear company has in the making seem destined to make Akron one of the leading air ports of the country.

The new field, which is within two miles of the company's factory, will be used for the expansion of aeronautical activities, especially the manufacture of large airships for passenger and commercial uses. A flying school for the training of airship pilots to anticipate the need of airship lines in various sections of the country is to be established. There will be complete facilities for the manufacture of dirigibles and for trials after completion. A dirigible will be on hand at all times for demonstration purposes.

Wingfoot field was used during the war for the training of several thousand dirigible pilots and observers for kite balloons. The hangar is 400 feet long, 150 feet wide and 80 feet high. It will house three 163-foot airships of the type used by the navy in war days. There are barracks for 1000 men and a hydrogen generating plant capable of producing 100,000 cubic feet of gas daily for the inflation of airships.

EXPORT OF MINERAL OILS.

In February 226,729,124 gallons of mineral oils, valued at \$34,185,340, were exported, an increase of more than 60,000,000 gallons over the same month last year. The total export of mineral oils for eight months ending in February, 1920, was 1,781,119,669, which is over 25,000,000 more than for the eight months ending in February of last year.

TO BAR HORSES FROM CITY.

An ordinance introduced in the Denver city council would bar horses, cattle, sheep and swine from the city limits after Jan. 1, 1925.



The School of Instruction for F-W-D Office and Service Men: At Left, a Typical Class Hearing a Lecture; at Right, at Work Assembling an Engine. The Course is Both Theory and Practice.

Motorized Department Checks Heavy Fire Losses

Covers Larger Area, Responds Quicker,
Climbs All Hills Fast and Is Maintained
at Less Than Half the Cost at Woonsocket,
R. I., for Average Animal Equipment.

By THOMAS M. WALSH.

A CRY in the still night. A tongue of flame leaps out into the blackness. Another cry and then a babel of shrieks as 400 children rush to and fro in terror. All are panic-stricken.

But only for a moment. The nuns, their aim and duty to sacrifice self, herd the youngsters in the very face of the devouring element and hurriedly, yet orderly, march them to safety.

But one dormitory has been cut off. A wall of flame has reared itself between the stairs and the sleeping rooms of a score of children. The two sisters might have rushed out before it was too late. No thought of that. They stay with their charges and both of them are seen at a window, each bearing a precious burden. A cool hand rings in an alarm.

Will the firemen come in time?

Before responding to the question—not the alarm—the first thing to do is to find out if this happens in a city that has a motorized fire department. If it does the answer is an emphatic "yes." All are saved.

If the city's fire equipment is horse drawn the nuns and their charges lose their lives.

Which is one little way of showing the difference between the two kinds of departments, and, there is all that difference and more.

The situation detailed above might well happen in Woonsocket, R. I., where the citizens of the community which gave Napoleon Lajoie, the U. S. Rubber



Fire Chief Cote and Chauffeur Sutherland in Pan-American Roadster.

Company and other valuable institutions to the world, are shouting right now over the fact that their fire department will be motorized from top to bottom before the next Independence day.

High on a hill, 183 feet above the heart of the city, is situated the St. Francis orphanage, which houses 400 children. A long climb up a grade varying from 12 to 20 per cent. is necessary to reach the heights on which the home is built. There has never been a fire there, thanks to the vigilance of the Sisters of St. Francis, who are in charge, and may a kind Providence guard against such a calamity.

Meet Horses on Way Back.

If the agonized cries of the little children there are ever heard their appeal to the firemen of Woonsocket will not be in vain for Chief A. J. Cote has made

test after test, sending his apparatus up that steep grade many times so that a call will bring an immediate response. The drivers know every stone on the way. These tests have always resulted the same way. The motor driven vehicles on their way back meet the horse driven machines, the poor, tired beasts, puffing their hearts away in the trying stages of the ascent.

The few minutes, even seconds, saved through a motorized department in answering the call from the 400 little ones if fire ever finds its evil way into the orphanage, will fully repay every dollar spent in bringing Woonsocket's fire fighting equipment up to date.

One little life snuffed out is more costly to community feeling than the entire expense of equipping a department with gasoline propelled vehicles. Motor cars mean the saving of many lives during the existence of a city and and no alibi can erase the wrong done by city fathers who delay in arming their departments with what is best fitted to battle against the heavy odds a raging fire has in its favor.

That's the view of Chief Cote and it's the opinion of every resident who takes pride in his city and feels that the public should be safeguarded against mankind's worst menace. The infrequency of big fires in Woonsocket in recent years is attributed by the city fathers to the fact that the fast motor cars have arrived in time to check the flames before they attained sufficient headway to inflict heavy damage.



First Four Units of Motorized Department—From Left to Right, Hose 1, Pope-Hartford Combination; Hose 2, Knox Combination; Hose 3, Pope-Hartford Combination; Truck 3, Scagrave Aerial Ladder, Drawn by Christie Tractor.



Knox Combination Wagon, Purchased March 10, 1913, First Unit of Motorized Woonsocket Fire Department.

Best Protection Is Best.

It took seven years in time and about \$67,000 in money to give Woonsocket the best to be had in automobile fire apparatus. "It's cheap at any price," says Chief Cote. "Any city which fails to motorize is not doing the fair thing by its citizens. The best protection possible is none too good against the menace of fire, which fights foul, striking without warning and must be met with sturdy weapons to be mastered. Fire department motorization is a duty and responsibility city officials can no longer evade," he concludes.

"Do It Now," Says Chief.

Chief Cote adds a word to the wise when he volunteers the suggestion "Do it now." The cost of motor equipment is rising steadily and the time for every city using horse-drawn vehicles to get into line and secure the best to be had is now, before the new advance certain to come. The fact that the two last pieces of apparatus ordered for Woonsocket, which complete the motorization of that city, cost nearly \$24,000, against less than \$34,000 for the seven machines previously in use demonstrate the rapidly ascending scale of prices and drive the last nail in the warning, "Do it now."

Got Knox Wagon in 1913.

Woonsocket got its first motor-driven wagon, a Knox combination in 1913, and has just signed contracts for the two last machines, Seagrave vehicles, one of

which is to be delivered June 1 and the other July 1. After the latter date the city will have to buy no more oats nor grain at prohibitive prices and will no longer be forced to care for sick or lamed equines. The machinery may slip



White Triple Combination Wagon, Which Pumps 600 Gallons a Minute—Bought Oct. 1, 1919; Located at No. 4 Station.

up once in a while, but the department's own mechanics can fix a break of any kind in jig time.

The brief for the motor-driven fire wagon, it being taken for granted that there is a vast saving of time, is clinched

Much Better Protection.

In the meanwhile the city received much greater protection from its five motor-driven wagons than from the four drawn by horses, while the former five actually cost to operate only what was

when the cost of maintenance is shown to be but less than one-half that of the old style equipment.

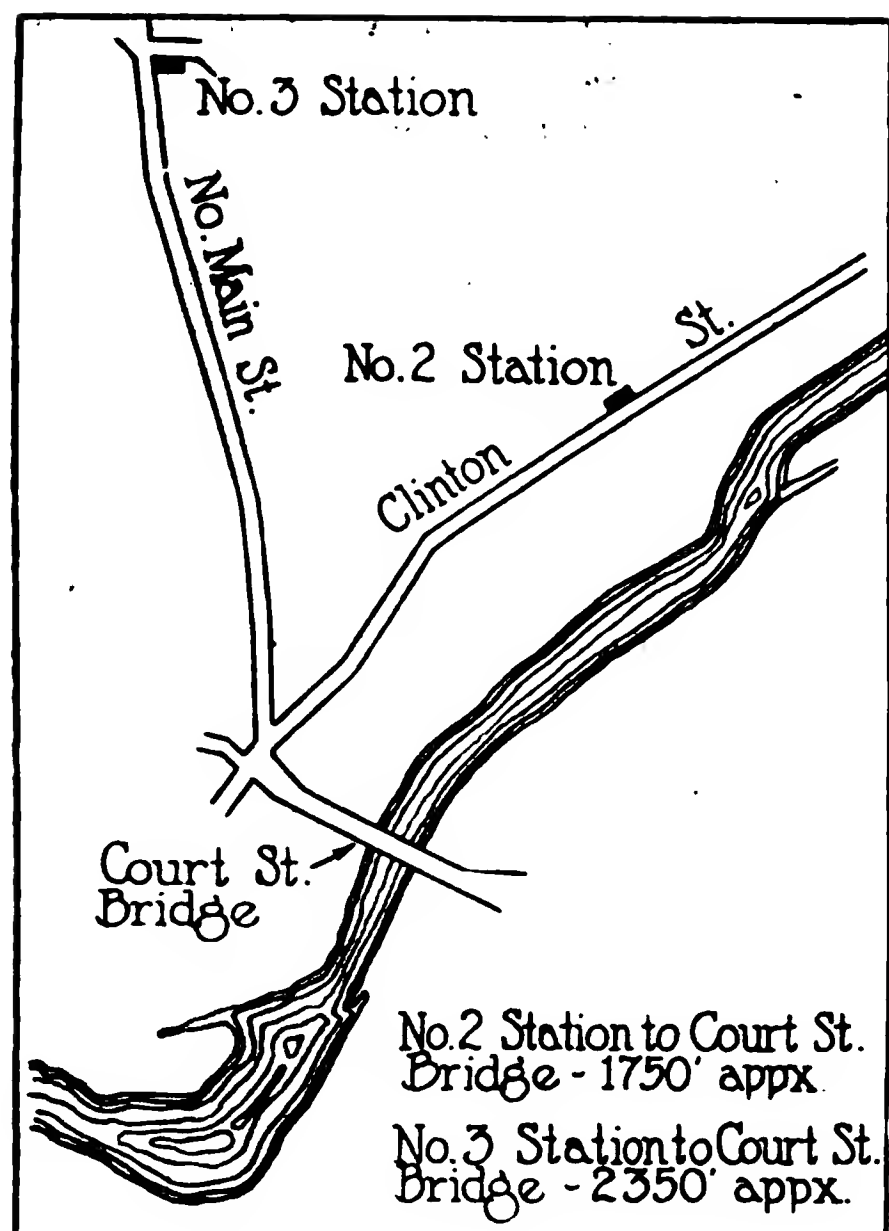
Horses Cost Double.

In the year 1917 no new apparatus was added to the Woonsocket department and this year furnishes the best comparative figure. In 1917 the cost for the four horse-drawn wagons was \$2817, against \$1476 for the five motor-driven vehicles. The latter figures included gasoline, repairs and everything entering into the maintenance of the equipment. The detailed cost of keeping the horse-drawn equipment follows: Forage, \$2277; shoeing, \$315; repairs to apparatus, \$169; harness repairs, \$22; medical attendance, \$33.

With the horses taking a back seat to the motor in recent years no fair comparison can be made, but with hay at \$5.00 and more a ton and grain and oats soaring into forbidden realms, the figures today must tell a tale that calls for a speedy shifting from the faithful but out-serviced horse to the modern distance-eating motor apparatus.



A Sturdy Piece of Apparatus in the Motorized Woonsocket Fire Department—This City Service Truck Is Drawn by a Mack Tractor—This Hook and Ladder Outfit Is at No. 5 Station.



Motor-Driven Apparatus Gains 600 Feet in Traveling 2350.

paid out for two of the latter. The motor vehicles covered greater area, of course, due to their speed and hill-climbing power. When two fires happen simultaneously they are especially valuable, as it takes very little time to run from one to the other while the horses, already fagged out by their first response, are almost helpless in case of a second alarm.

The scarcity of land in the cities today has forced factories and other valuable buildings to find sites in the outlying districts. These properties, worth millions, could expect no kind of protection from horse-drawn apparatus, although the mills are heavily taxed. Schools and churches are gradually being forced outward from central points. These institutions deserve the kind of protection which the antiquated horse-drawn equipment cannot provide.

Up Hill and Down Dale.

Woonsocket is a city of hills and gives its fire department a supreme test. This condition, which is found in many communities, does not lessen the utility of gasoline-driven vehicles, which climb grades almost as readily as they shoot over the level grade.

Depot square, leading to the Court street bridge, is the center of the city. Crossing the bridge the fire wagons face the Carrington avenue hill, or other parallel ascents. Going straight ahead they must climb the South Main street hill. Turning into Railroad street and heading toward the state line they encounter the Harris avenue climb. Turning off at Market square into River street, or going by way of South Main street into the Fairmount district they are up against grades equal to that approaching the St. Francis orphanage. The motor machines take these hills with a skip and a jump and scoot away for the point where the blaze is. When the horses take any one of these climbs they are ready to quit.

Saved City Thousands.

The power to mount any elevation without delay and to get there in time

has already saved Woonsocket thousands of dollars, city officials say.

Woonsocket got its first motor-driven fire machine March 10, 1913. This was a Knox combination wagon, which is still in service and looks and has the protective value of a new vehicle. It was in this year that the comparative speeds of the horse and motor were first tested. An alarm was sounded, to which only the Knox, stationed at No. 3 station on North Main street, and a horse-drawn hose wagon from No. 2 station on Clinton street, were to respond, the other firemen being informed of the tryout.

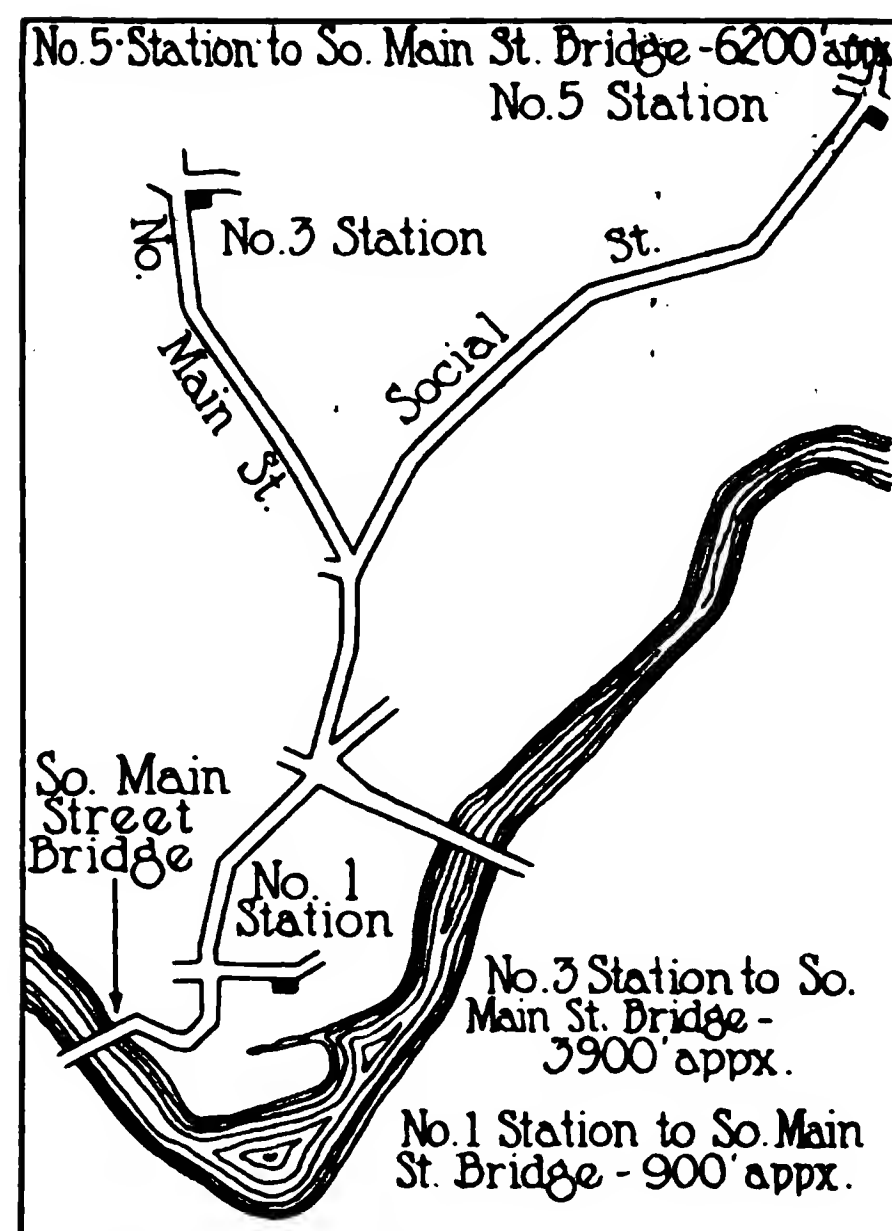
The Knox passed the horse-drawn wagon on the Court street bridge, having travelled 2350 feet against 1750 for the latter. This gain of 600 feet was turned into well over a half mile before the supposed scene of the fire on Manville road was reached, the motor apparatus being turned around and on its way back before the wagon reached the point for turning.

On runs to St. Francis orphanage the Knox and other motor-driven machines have frequently reached the orphanage and started back, after travelling a distance of 6000 feet and upwards against 3850 feet, the distance the horse-drawn equipment at No. 1 station covered.

3900 Feet Against 900.

When an alarm is rung from the South Main street section people have acquired the habit of assembling near the South Main street bridge, for just beyond this point the motor cars from the far-away stations usually pass the horse-drawn hook and ladder truck from the nearby station. From No. 1 station to the South Main street bridge is but 900 feet. Yet the horses and their attached truck from No. 1 are usually passed on the bridge by the chief's Pan-American roadster, which has come from No. 5 station, 6200 feet away, and the Knox from No. 3 station, which has travelled 3900 feet.

On runs to outlying sections, particularly in the Cumberland Hill road sec-



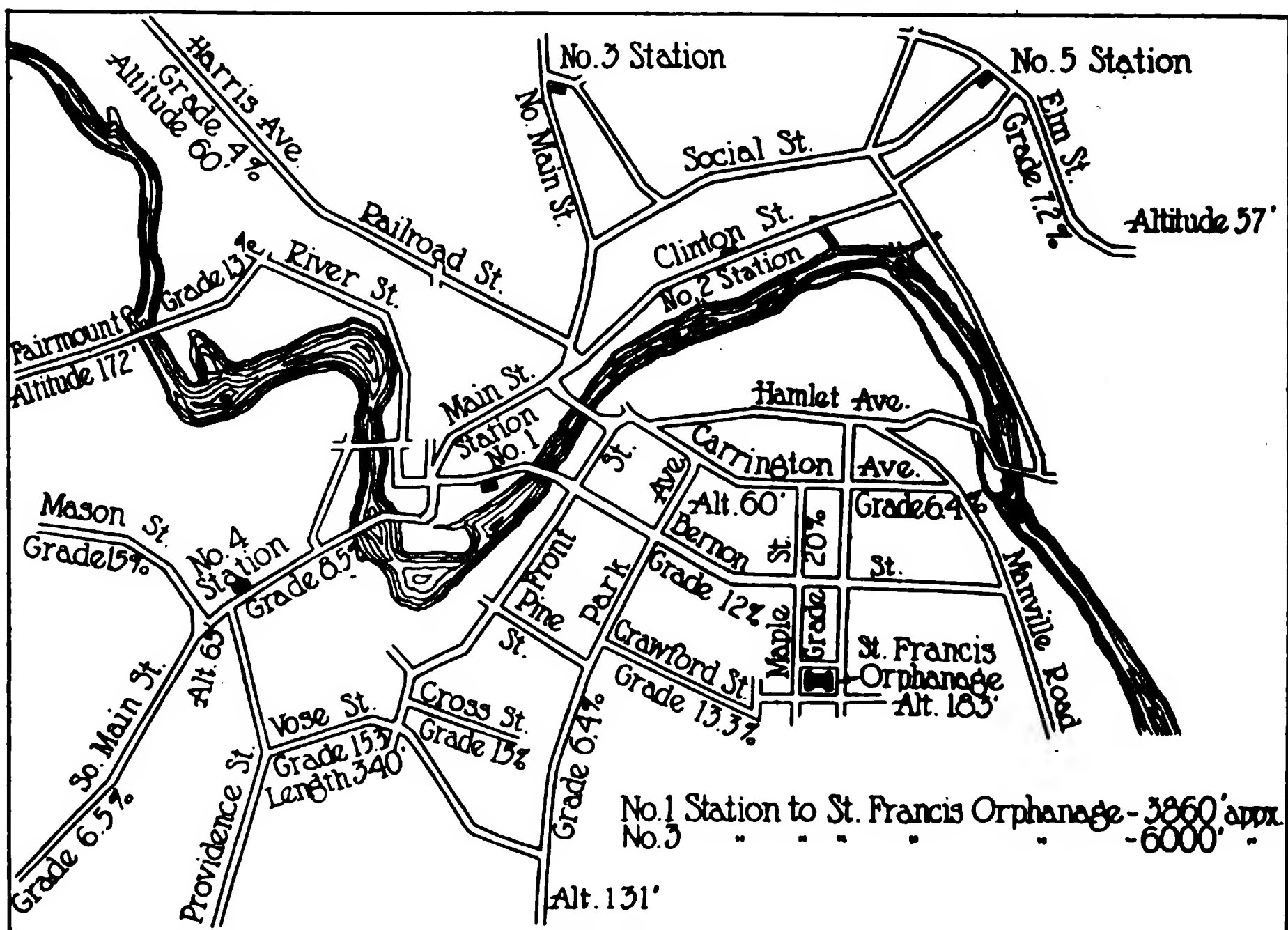
Motor Wagon Goes 3900 Feet Against 900 by Horse-Drawn Vehicle.

tions, the motor-driven apparatus has actually squelched incipient blazes with chemicals and started homeward before the horse-drawn equipment reached the fires.

Two New Cars Purchased.

The two new machines to finish motorizing the Woonsocket department are a Seagrave truck, with a four-wheel tractor, and 75-foot aerial ladder, due July 1, which will displace a three-horse hitch at No. 1 station, and a Seagrave triple combination wagon, due June 1, to displace a two-horse hitch at No. 2 station. This is a pump, chemical and hose wagon. It has capacity for pumping 600 gallons a minute and does not need hydrants, being able to draw water from a river, pond or any stream available for the purpose.

The motor-driven apparatus in use at



Woonsocket a "City of Hills." Grades and Altitudes Give Idea of Climbs Motorized Fire Department Must Negotiate.

present and the points where it is housed follows:

No. 1 station, Pope-Hartford combination (chemical and hose), purchased March 26, 1915.

No. 3 station, Knox combination (chemical and hose), purchased March 10, 1913, and Seagrave 75-foot aerial ladder truck, driven by Christie motor, purchased July 1, 1913.

No. 4 station, White triple combination (chemical, hose and pump with capacity for pumping 600 gallons a minute), purchased Oct. 1, 1919.

No. 5 station, Pope-Hartford combination (chemical and hose), purchased March 4, 1915; City service truck, with Mack tractor, purchased Oct. 15, 1916; Pan-American roadster, purchased July 20, 1919.

The machines have kept in surprisingly good shape. Most firemen appear to be mechanically inclined. All are anxious to learn to drive the various units and once they know how to run the vehicles they are ready and willing to learn how to keep them running. The result is that nearly every member of the department is something of a mechanical expert and only a break of major character forces an outside repair job. The interest in the machines has heightened the enthusiasm of the men in their profession and there is rivalry between the various stations as to keeping the machines in trim, getting to fires on time and doing all the work speedily and efficiently.

Motorization has proven itself in Woonsocket many times over, Chief Cote declares. In addition to actual results attained in the saving of property by responding far ahead of the time required for runs in olden days—and in getting to a fire every instant counts—the chief states that a motor equipped department is the safest insurance against conflagrations and needless loss of life.

ENTRIES CLOSE MAY 1 FOR BIG RELIABILITY RUN.

Entries close at midnight May 1 for the First National Motor Truck Reliability contest to be run out of Omaha, Neb., May 31 or June 1. There is a possibility that the start may be delayed until June 15, the final decision resting on the condition of the roads when the pathfinder goes over the route in May. Trucks must be in the hands of the technical committee May 22. This committee will go over them again when they conclude the 2500-mile run, which is to be made in 25 days.

The contest is limited to pneumatic tired trucks and is designed to demonstrate the speed and reliability of vehicles up to and including the 3½-ton class. Penalties will be by points.

2,410,000 TRUCKS IN 1930.

A. G. Hebb, one of the incorporators of the new \$10,000,000 Patriot Motors Co. of Lincoln, Neb., figures truck production this year at 425,000, and forecasts an output of 1,045,000 in 1925 and 2,410,000 in 1930.

Members of Federal Highway Council Number 10,000

The Federal Highway Council, formed 'to direct, advise and assist the carrying on of the campaign for the passage of the Federal Highway legislation,' has now a membership of 10,000, all zealous advocates of the building of permanent highways to improve transportation facilities and thereby advance the welfare of every resident of the United States. The executive committee has approved the reports of Chairman S. M. Williams and Secretary H. G. Shirley, both of which offer constructive recommendations for the forwarding of the cause.

Fully 90 per cent. of the members have been nominated as representatives of local organizations in every section of the country, including commercial clubs, Chambers of Commerce, trade organizations, Rotary and Kiwanis clubs, Travelers' Protective associations and United Commercial Travelers' associations, and in a very few cases automobile clubs, this being where the requests for affiliation have come from such clubs.

President Williams states that the organization has now attained such a firm footing that the forming of state units should be pushed immediately. In establishing these bodies it is proposed to take advantage of existing organizations, where such associations are efficient and are willing to serve as state councils.

The president reviews the work of the Educational Bureau formed by the council, which is not only educating the public through the press and motion pictures, but is cooperating with state highway departments and Good Roads associations everywhere in furthering its project. It is also encouraging and supporting campaigns for the purpose of inducing voters to favor bond issues and otherwise provide for road construction, urging that motor vehicle fees be used only for maintenance and that the building of the highways be paid for by the public, which they serve. The bureau is also to publish a book, "The Wheel, the Load and the Road," which will be a standard treatise on the subject of good roads.

The council established the Highway Transportation Bureau on Sept. 15 last to take up some of the work laid down by the Council of National Defense. Among other tasks this bureau is making a careful study of the short haul and terminal problems in their relation to the motor truck.

Secretary Shirley's report goes into the holdup of road building because of the lack of rail transportation for construction material. Highway authorities are awarding contracts for less than the stipulated mileage because of this fact, and the threatened advance in the cost of labor, materials and freightage. This means that much of the needed work will not be done even with funds available.

In this connection Secretary Shirley makes the statement that an outlay of

from \$750,000,000 to \$1,000,000,000 per annum for the next 15 years is necessary to put the highways of the nation in shape to properly care for the rapidly increasing traffic.

The question of soil conditions is also discussed by the secretary, who advocates an engineer of soils in each state who would not only save money, but ensure better roads.

NEW JERSEY MOTOR TRUCKS ON FIVE-DAY JAUNT.

On the morning of April 17, about three score motor trucks will leave Newark for a five-day jaunt around the state to demonstrate the power and value of the truck in the short field haul. The New Jersey Automobile Trade Association fostered the plan and its success can be forecasted by the fact that eight or 10 cities will get the message of the truck on each of the five days the tourists are out.

Nearly every manufacturer, agent, distributor and dealer in the territory covered by the tour is to be represented. In addition to showing the vehicles in action, statistics are to be gathered and many important assets to the industry realized. The first stop is to be made at Asbury park and then the caravan will turn southward and double back to Sussex and touch practically every town of importance in the state.

RAILROADS GET BUSY.

An indication that the railroads under private control are going to make a fight for business is shown by the placing of orders for stock by several roads. The Southern Pacific has ordered 35 passenger coaches and 30 baggage cars and will build 4000 box cars in its own shops. The New York, New Haven & Hartford railroad has ordered 40 large freight locomotives at an estimated cost of \$70,000 each. These engines will be put on the Shore Line, releasing the locomotives in use there for other lines to which they are suited. They will be delivered during July and August.

FOREIGN TRADE CONVENTION.

It is anticipated that the motor truck industry will be well represented at the seventh National Foreign Trade Convention, to be held at San Francisco, May 12-15. The theme will be: "The Effect of Being a Creditor Nation." Requests for hotel reservations should be sent to C. P. Converse, secretary Pacific Coast Committee, room 1237, Merchants Exchange building, San Francisco.

BRITISH MOTOR INDUSTRY HUMS.

New capital stock in motor traction and manufacturing to the amount of \$69,140,799 was issued in England in 1919 against \$3,229,896 in 1918. During the last quarter 18 motor companies were before the public with new issues, in addition to one or two offers to shareholders only.

FACTS OF FOREIGN MARKETS

MOTOR TRANSPORTATION IN GREAT BRITAIN.

A daily motor lorry service between London and Birmingham, England, has been put into operation as the result of an investigation by which the promoters were assured that a large amount of traffic between the two points was available, and an extension of the service from Birmingham to Manchester is under consideration. The journey each way is made by night in order to secure the delivery of goods during business hours the following day.

The development of motor lorry transport is being increasingly recognized by British business men. A motor lorry which recently went from London to Cardiff brought back tobacco valued at \$120,000. At Liverpool lorries provided by the ministry of transport to relieve dock congestion are operating over a radius of 25 miles. There is every indication that the scheme will be extended and another 50 lorries be sent to Liverpool, as traders' applications for their use are being received in numbers. In Manchester 50 lorries are operating within a radius of 25 miles of the docks. There are 25,000 tons of goods waiting to be carried within that radius. In the Bristol district 100 lorries are working, and at the Avonmouth docks there are 30,000 tons of goods awaiting transport. At Hull, where the radius to be covered is 40 miles, the lorries are dealing with large quantities of foodstuffs.

ALGERIA IS IN MARKET FOR BIG MOTOR TRUCKS.

Algeria is in the market for motor trucks to supplement rail transportation. French army trucks are now used in moving the cereal crop and for other purposes. An American seven-ton truck selling at about \$5000 should, at normal exchange, find ready buyers, as most of the French trucks are smaller. Included among the latter in use are: Rochet-Schneider, Berliet, De Dion-Bouton and the Fiat. The last named, a $4\frac{1}{2}$ -ton truck, is bringing 35,000 francs and the Berliet five-tonner is sold for 31,000 francs. There is also a call for motor buses in Algeria.

French manufacturers are unable to make deliveries under six or nine months and this factor should furnish American manufacturers with an excellent opening. Algeria is flush with money, large fortunes being made during the war.

FEW TRUCKS IN NORWAY.

Norway, with little agriculture, and rugged, rocky, broken territory, offers little attraction for American motor truck manufacturers. At the close of 1918 there were 661 trucks in service there. There are 54 bus routes on which 117 motor buses ply regularly.

200 REO TRUCKS MAKING HISTORY IN WEST AFRICA.

Ploughing through jungle trails on schedule time, piloted by natives, 125 Reo motor trucks are making transportation history in West Africa.

This vehicle has been standardized by Elder Dempster & Co., Ltd., Liverpool, England, which has 200 trucks operating in Africa and has 75 Reos now on the way.

The trucks are used as feeders to the steamship lines owned by the company, which has upwards of a hundred bottoms plying between West African ports and Europe and America. They take men and supplies to the interior stations and return to the ports with cocoa products, palm oil, hides and rubber. These motor truck routes are being rapidly extended as narrow gauge railroads have proven entirely inadequate.

The combination of difficult climatic conditions, terrible roads and unskilled drivers subject the trucks to the ultimate test and that they have been able to stand up proves their reliability. Heavy trucks and those with solid tires cannot be used in the country. The total weight of vehicle and load is limited to $2\frac{1}{4}$ tons. Trucks of proportionate large power, however, are needed to traverse the soft roads during the rainy season.

JAPAN PAYS BOUNTY TO TRUCK MAKER AND OWNER.

Japan is now paying a bounty not to exceed \$1000 on each motor truck manufactured in that country. An additional allowance of \$250 is granted for trucks operated by the manufacturer or let out by him for hire. The buyer of a new truck receives a bounty of \$500 and \$150 a year for five years for upkeep. The latter bounty goes on for 10 years, when the manufacturer owns and operates the machine. Owners of imported trucks get \$500 and the upkeep allowance. Only Japanese subjects receive these bounties.

The narrow, crowded streets of most Japanese communities handicap motor truck use and confine the extensive use of these vehicles at present to Tokio and Osaka. Roads must be widened and bridges strengthened in the smaller cities and rural districts before the truck can become a national carrier.

STANDARDIZATION IN ENGLAND.

Standardization of the motor industry in England is being advocated by the Association of British Motor & Allied Manufacturers, the Society of Motor Manufacturers and Traders, Inc., the British Machine Tool Trades' Association and the British Engineering Standards Association. Motor firms are making co-operative purchases of materials. An internal code for the British motor trade is also being formed. The standardization of gears is under consideration.

UNITED KINGDOM WILL TAX MOTOR VEHICLES.

The United Kingdom is to levy a new tax on motor vehicles based on the principle of road wear and tear. Weight will be the unit for commercial vehicles. The figures are expected to be as follows: On the 30,000 under one ton, unladen weight, \$77.86 each; on the 12,000 between one and two tons, unladen weight, \$102.20; on the 20,000 between two and three tons, unladen weight, \$121.66; on the 15,000 between three and four tons, unladen weight, \$136.26; on the 8000 over four tons, unladen weight, \$146.

There will be a special tax of \$24.33 on the 10,000 commercial vehicles, with the right to draw trailers. The 2000 motor tractors are expected to pay \$102.20 each, while agricultural tractors used on roads for haulage will pay \$48.67, although these tractors when not used for haulage may escape with a nominal duty of a few shillings.

NORWAY TO BAR SOLID TIRES BY LEGISLATION.

The Goodyear Tire & Rubber Co. learns by cable advices that Norway is the first country in the world to propose national legislation providing that motor trucks up to two-ton capacity must be equipped with pneumatic tires in order to lessen wear of highways. Motor trucks shipped abroad by American manufacturers have already been refused admission because they do not conform to the wheel and tire specifications called for in the proposed law, which seems certain to be adopted.

The regulation will permit either pneumatic or solid equipment of more than five-inch tires on trucks from two to $3\frac{1}{4}$ tons, while heavier trucks may run on solids. The legislation is directed particularly against the use of solid tires on country roads, although it may also be applied to city streets. The Norwegian government feels that its country roads will be heavily worn within two years unless action is taken.

BUILDING ROADS IN INDIA.

Sales have recently been made in India of American road rollers, scarifiers and graders for road construction. Appropriations for road building have been made and other suitable machinery will doubtless be purchased. British manufacturers cannot make prompt deliveries and American dealers should be able to book this business.

NO TRAILERS FOR EGYPT.

There is no demand for trailers in Egypt at present a report from Consul Lester Maynard at Alexandria announces. The roads are not suitable for motor traction and cotton, the principal commodity, is handled direct from compass to railway.

SWISS SHOULD BE TOLD ABOUT AMERICAN TRUCKS.

Switzerland has less than 2000 motor trucks in service, scarcely a dozen being of American manufacture. As the American truck is far superior to any in use there it might be a good idea for manufacturers to acquaint the Swiss with that fact. The principal motor trucks in service are the Swiss made Sauer and Berna, costing from 20,000 to 40,000 Swiss francs (\$3860 to \$7720).

Germany sent in 133 of the 171 cars imported. The dumping of renovated war machines by France and Germany is feared.

Delays in deliveries have worked to the disadvantage of American cars. It is believed that there would be a ready sale of one-ton and 1½-ton trucks if prompt deliveries could be made.

ENGLAND CAN USE AMERICAN TWO-TON TRUCKS ONLY.

American manufacturers of heavy type trucks may turn elsewhere from England for at least two years, for not only will imports of this class of vehicle likely be barred, but the turning back of 50,000 army trucks into industry at prices that defy American competition will preclude all possibility of this country doing any business in the English market.

Samuel A. Wallace, mechanical transport director for London, and London distributor for the Ford, made these facts clear during a recent visit to the Ford plant at Detroit. Mr. Wallace is also responsible for the statement that there is a market in England for at least 200,000 two-ton trucks.

BRITISH TO FEATURE DEVELOPMENT OF DESIGN.

Conceding that the volume of American production enables automobile manufacturers in this country to fix a price which guarantees for their output 90 per cent. of the world's export market, experts on the other side are urging British manufacturers to concentrate on design, that being the only feature where Britain can hope to lead. The American Chamber of Commerce in London feels that England has a long road to travel before she can lead in this department.

GOODYEAR PLANT IN BRAZIL.

The Goodyear Tire & Rubber Co., Akron, O., is building a branch plant at Rio de Janeiro, Brazil, to be completed in 1922. It will employ 1000 and produce 1000 tires a day. Most of the workers will be recruited in Akron and will be taught Portuguese.

NEW BRITISH COMPANIES.

In the last half of 1919 the motors business boomed in London, 411 new companies being formed with a capitalization of \$89,587,025. In Edinburgh and Dublin 26 companies were organized, the total capitalization being \$1,348,025.

BRISK DEMAND FOR AMERICAN CARS IN SCOTLAND.

There is a clamor for American cars in Scotland and almost any price will be paid for immediate delivery. Edinburgh is the center of the buying district and, with a good horse bringing nearly \$1000, the motor transport has the right of way. British manufacturers cannot supply the demand and dealers are turning toward America.

Five-year old machines have been known to sell there for 50 per cent. above the original cost.

Business vehicles ranging in price from \$2920 to \$5840 are sought. There is also a call for motor omnibuses and touring chars-a-bancs (wagonettes). A four-ton type of the latter, carrying 32 passengers and costing \$7780, has been employed by the city. About 50 of these are in service. These cars are wanted for linking up villages with cities and towns, for touring purposes by sightseers and soccer football players and enthusiasts. There is also a brisk demand for light delivery trucks.

On Oct. 1, 1919, there were 1132 motor cars of over two-ton weight in the Edinburgh consular district. Cars used for trade purposes numbered 2864.

BRAZIL MUST BE SHOWN THE VALUE OF MOTOR TRUCKS.

Reports from Brazil show the necessity of actual demonstration to popularize the motor truck in that market, where American automobiles and tires have already carried the day and are almost the only kind in service. It is suggested that any company planning to enter this field send along a competent salesman, with a number of trucks, who would do the work of the prospective customer, thus showing the saving and increased efficiency. A mechanic who would remain for subsequent services would also be needed. A truck of from one to three tons, four cylinders, with heavy wheels, solid tires and a very large cooling system, would best answer the needs of the country.

INDIA NEEDS MOTOR TRUCKS.

There is a good market for motor vehicles in some parts of India. There is a demand around Calcutta for trucks of one and two-ton capacity. Recent famines have depleted the supply of bullocks in and about Bombay and bullock transportation, which is exceedingly slow, is bound to give place to motor trucks, a large sale of which is expected this year.

FUEL OIL ON FRENCH RAILWAYS.

Fuel oil is being used to replace coal on French railways, one road having made arrangements to equip 200 locomotives for fuel oil and install numerous storage reservoirs of from 40 to 100 tons capacity at various points on its lines. This should open a large field for American product and for oil burning appliances and similar devices.

TRAILERS WIN POPULARITY IN ENGLAND.

The Bureau of Foreign and Domestic Commerce is in receipt of information from Consul H. C. Claiborne that trailers are winning great popularity in England, where good roads and the dense population are factors in their success. Routes up to distances of 100 miles have been established for commercial motor vehicles. Deliveries are made from door to door of factory or warehouse.

The big stimulus to motor traction has opened a fine market for trailers in that country. There is no duty nor restriction on their importation. Because of the lack of standardization and mass production the cost of producing trailers in England is said to be 15 per cent. higher than the cost in the United States.

The Bureau of Foreign and Domestic Commerce is prepared to furnish information as to style used and other details to enable American manufacturers to invade the British field.

MACK TRUCKS TO JAPAN.

The transformation of Japan into a country of modern fireproof hotels, apartment houses, factories and office buildings, which is in immediate prospect, will open new fields for the motor truck. The International Motor Co. is already in on the ground floor, having received an order for six Mack trucks to be shipped to Japan at an early date. The order was given by the George A. Fuller Co., a contracting concern operating all over the United States. The trucks will be used in Tokio, where the contracting company has a five-year job and where it will soon open a branch office.

GASOLINE UP IN BRITAIN.

England has advanced the price of gasoline 16 cents a gallon, instead of the 14 announced previously. The "Imperial gallon" is one-fifth larger than the American gallon. At the present rate of exchange the cost per imperial gallon in the United States is 41 to 42 cents. The rate of exchange is said to represent an increase of nine cents a gallon. Freight rates are 18 cents on a gallon of gasoline imported from New York to the United Kingdom.

TRUCK SHOW IN ENGLAND.

The Society of Motor Manufacturers and Traders, Ltd., London, will hold a truck show in Olympia during October. It will probably be the first half of the month so as to give plenty of clearance for the passenger car show to be held at the same place early in November.

SWISS FOR AMERICAN OILS.

The Swiss have passed up all other lubricating oils in favor of the American product. Russia, Alsace and Galicia formerly furnished a supply.

TRUCK AND BOAT FREIGHT SERVICE DELIVERS 315 MILES IN 30 HOURS



The 5-Ton Pierce-Arrow and 2-Ton Pneumatic Cord Tired White in Service of Andrews Brothens at Rhode Island Plant.

THROUGH the use of motor trucks, augmented by boat service, Andrews Brothers, worsted goods manufacturers, maintain regular 30-hour service between their factories in Frankford, Pa., a suburb of Philadelphia, and Branch Village, North Smithfield, R. I., a distance of 315 miles. This schedule can be cut when necessity demands unusual speed.

Not only is the Andrews Brothers' plan a time saver, but it is also a winner from the standpoint of economy, this despite the fact that the all-boat freight rate from Pawtucket, R. I., to Philadelphia is but \$1.10 a hundred pounds against \$1.30 a hundred by the truck-boat combination route.

The difference of 20 cents a hundred is more than made up, according to the firm's view, by the fact that in finishing the run by trucks these vehicles draw up at the factory, saving the delay of unloading from steamer to truck at the terminal.

Under the title of the Mill Transit Service Andrews Brothers controls 10 trucks, four of which are on the road constantly between New York and Philadelphia, two are in the service of the company's salesrooms at New York City, two are used by the Pennsylvania factory and two by the Rhode Island plant. Several Ford delivery trucks are also employed.

Of the fleet of 10 trucks nine are Pierce-Arrow five-tonners. The other, which is used at the Rhode Island mill, is a two-ton White, equipped with Good-year pneumatic tires.

The Branch Village mill weaves worsteds and the Frankford mill weaves, dyes and finishes. The nature of the goods allows only a load of about three tons on the big Pierce-Arrow at Branch Village. Usually a start is made about 1 p. m. from that factory to the Pawtucket pier, 14 miles away. This is done so that even in case of accident the truck gets there in plenty of time to have its load put aboard one of the steamers of the Blackstone Valley Transportation Co., which leaves at 5 o'clock.

The steamer is due at Pier 30, New York City, at 7 a. m. As a rule the Andrews Brothers shipment is not put aboard one of the trucks bound for Philadelphia until the middle of the forenoon. The run of approximately 105 miles to Frankford is negotiated in around seven hours, bringing the goods to the Pennsylvania factory about 24 hours after they leave Pawtucket and less than 30 after getting away from the Branch Village factory. The Branch Village truck nearly always has a load from the incoming boat.

Two trucks are run each way between Frankford and New York daily. One of those leaving Philadelphia carries the Rhode Island shipment and the other brings raw material or merchandise from New York to the Philadelphia mill. One of the two trucks leaving Frankford carries the finished product to the New York salesrooms, and the other a load of yarn, supplies or machinery for the Rhode Island mill. The trucks meet half

way and change drivers, the two drivers living in New York thus being enabled to return to their homes at night and the Philadelphia pilots being similarly favored.

The big Pierce-Arrow truck in service at the Rhode Island plant made six round trips to Philadelphia between spring and early July last year, at which time both factories were in course of construction. Machinery was usually hauled both ways, with a load of yarn occasionally. All of these round trips were made in four days, without night driving, which was some speed record. These journeys were made between Branch Village, the Greenwich mills, East Greenwich, R. I., and the Frankford mill.

Leaving East Greenwich Tuesday at 6 a. m., to which point they had driven Monday afternoon, truck and driver would reach Stamford, Conn., at 5 p. m. and put up for the night. They would leave Stamford at 6 a. m. Wednesday and reach Philadelphia at 4 p. m. Thursday they would get away from Philadelphia at 6 a. m. and reach Stamford at 4 p. m., remaining over night. The start from Stamford would be at 6 a. m. Friday and the through trip to Branch Village would be completed at 7 p. m.

The Pierce-Arrow truck now makes a trip to Pawtucket every afternoon from Northern Rhode Island, except Saturday, on which day the mill does not operate. In the morning it is worked with the White two-tonner drawing worsteds from the various Woonsocket mills, carrying freight and bringing supplies from the factory storehouse to the mill itself. One of its loads in construction days was eight tons of bricks.

The Andrews Brothers management declares that for concerns with mills at widely varying points the trucks are indispensable.



The 5-Ton Pierce-Arrow and the Andrews Brothers Driver Who Piloted the Truck to Philadelphia and Back Six Times, Each 630-Mile Round Trip Being in Less Than 96 Hours.

Truck Owners Project Forming National Association

A National Motor Truck Owners' Association will be formed as the outgrowth of a preliminary meeting held at Philadelphia on April 8. Representatives from nine Eastern states attended the gathering in the Chamber of Commerce, and it was the consensus of opinion that such an organization is a vital necessity. A convention of owners from all sections of the country will be called to complete the project.

E. M. Bird, president of the Philadelphia Motor Truck Protective Association, initiated the movement. C. W. Reed of the Federal Highway Council, Edward T. Fleming and Tom Snyder were among the speakers. A committee of 15 was named to call the proposed convention and perfect plans for the organization. George I. Oberholtzer is its chairman.

FIRESTONE WRECKS AUTOS TO TEACH SAFETY LESSON.

The start of a campaign by New York state authorities to cut down the toll of motor casualties was made recently at a "Safety First Rally" in the Capitol theater, Broadway's new largest in the world movie house, attended by 5500 school children. "Careless America," an especially prepared film, was shown and prominent speakers urged care on the part of the little folks in their daily travels.

The picture drama, "Careless America," which demonstrates in a thrilling manner the principle of accident avoidance, was donated to the campaign by H. S. Firestone, the Akron tire manufacturer. Two large automobiles were wrecked in its making.

FEBRUARY TRUCK EXPORTS HIT HIGH MARK.

Exports of motor trucks in February were well beyond past figures. Shipments totalled 2889, worth \$4,130,468, against 1403, valued at \$4,270,542, in February of last year and 1721, worth \$2,727,856, in January of this year. The United Kingdom took 410 trucks, valued at \$723,433. Cuba got 186, Canada 158, Japan 140 and Dutch East Indies 101 American trucks.

GOODYEAR TIRES IN BRAZIL.

The Goodyear Tire & Rubber Co., Akron, O., is to establish a branch factory in Brazil, and its factory, which will be in operation within 18 months, is expected to turn out 5000 tires daily.

TRUCK MOTORS RUN PLANT.

Heavy duty Reynolds truck motors recently enabled five Detroit plants to operate when the Detroit Edison Co. was unable to furnish power, because of lack of coal.

NATIONAL PEACE-WAY PLAN IS OF- FERED BY BRYAN.

William Jennings Bryan offers a suggestion in regard to a national Peace-Way to be constructed by the federal government in celebration of the conclusion of peace.

Mr. Bryan would have the roadway extend from ocean to ocean and from the Canadian boundary to the gulf, with main lines and branches sufficient to reach into every state. Rest rooms would be established along the way and at these would be space for bronze tablets and statues to honor the soldier dead.

Mr. Bryan touched on the subject at an address before the Rotary club, Miami, Fla., and later elaborated on the plan in a communication to the editor of the Dixie Borderland Highways Magazine. In this letter Mr. Bryan expresses the conviction that the states would willingly supplement the work by extending the road into the various counties, giving the United States the best road system in the world.

PLAN THROUGH HIGHWAY FROM WINDSOR TO ONTARIO.

The provincial government of Ontario will build a through highway from Windsor to Ontario in order to give Canadian farmers the advantages of the Detroit market and also attract tourists to the provinces. The road will be from Windsor, through Maidstone, Tilbury and Chatham to London. Another will branch off at Maidstone, thence to Blenheim on the Talbot road, connecting with the present eastern highway. Capt. W. S. Gilbreath, manager of the Detroit Automobile club, accompanied a delegation from Chatham, London and other Canadian cities on a recent visit to Premier Drury and members of his cabinet, the decision to build the road following this conference.

COST SYSTEM SAVES COMPANY \$20,000 A YEAR.

The Hydrox Co. of Chicago, which has 24 trucks delivering ice cream, announces that through the use of the National Standard Truck Cost System it has been able to save nearly two cents a gallon on over a million gallons distributed during the year. The cost system has also done away with inefficient operations. In addition the trucks cover a far greater territory than when horses were used. The company's first gas driven truck bought two years ago was a Service and the company has now standardized on this make.

NEW BAY STATE LAW.

To remove a technicality requiring motorists from Rhode Island to stop at the state line, remove their Rhode Island number and substitute the Massachusetts plates, the latter state has passed a law that allows motor vehicles and trailers to display the register number plates of both states.

Work Demonstration Proposed Truck Show Feature

Whether shows depicting motor trucks in action are best is among the questions to be decided by George M. Graham general sales manager of the Pierce-Arrow Motor Car Co., and R. H. Salmons, vice president and general manager of the Selden Truck Corp., as a committee of the National Automobile Chamber of Commerce. The committee will fix the number of shows to be held and their locations. The National Motor Truck Sales Managers' Association will be consulted.

Manager Graham is imbued with the idea that buildings can be secured sizeable enough to seat spectators who can watch the trucks in operation and thus be taught the lesson of transportation.

URGES CUT-THROAT METHODS BY DEALERS BE ELIMINATED.

Good roads and the elimination of cut-throat methods among dealers were advocated at the annual meeting of the Louisiana-Mississippi Automotive Trades Association at New Orleans, March 17-18. The next meeting will be at Gulfport, Miss.

The 315 members present re-elected the following energetic staff of officers: President, George D. Wray, Shreveport; vice president, A. H. Borden, New Orleans; general manager and secretary, C. U. McDowell, New Orleans. Harry G. Moock, business manager of the National Automobile Dealers' Association of St. Louis, A. E. Hildebrandt, general manager of the National Tractor Demonstration, and Ginder Abbott of New Orleans addressed the meeting.

SERVICE COMPANY AIRPLANES BACK IN INDIANA.

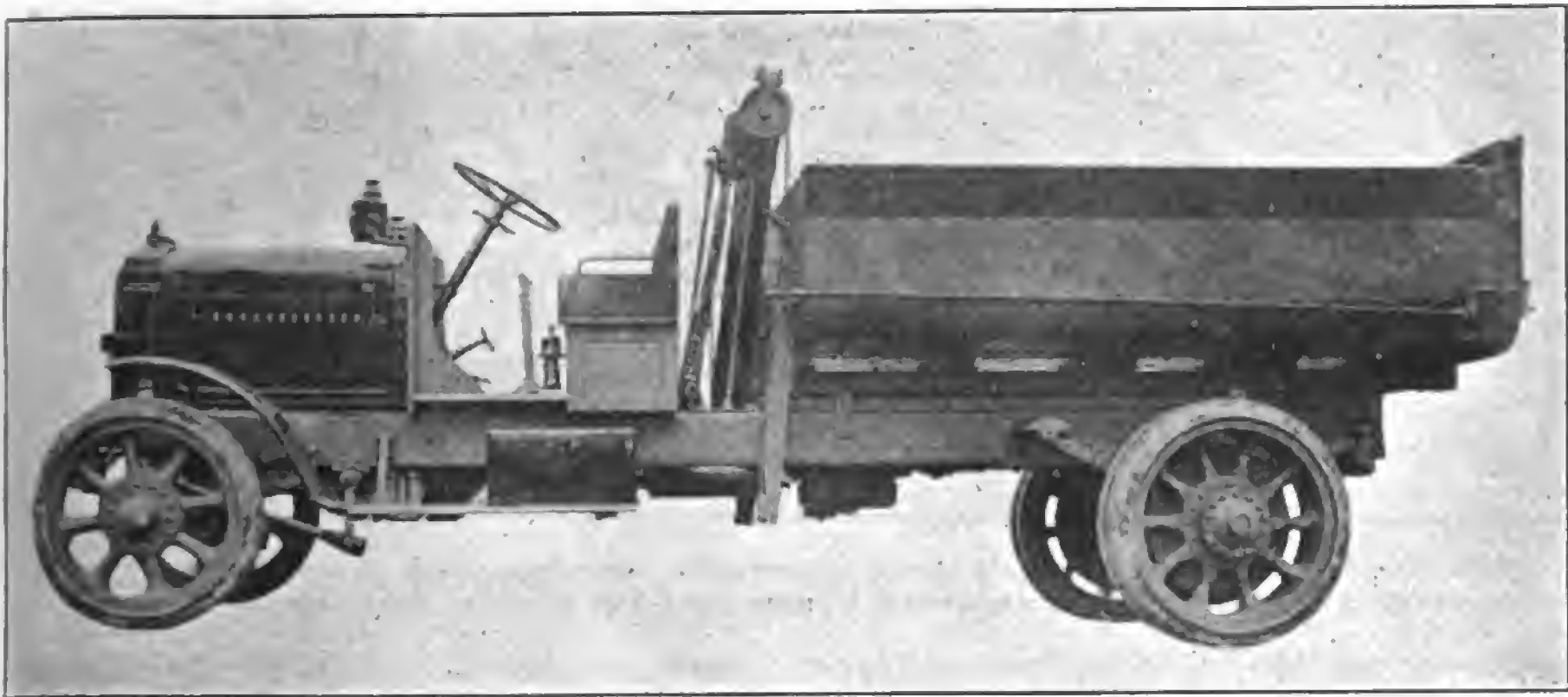
Airplanes used by the Service Motor Truck Co., Wabash, Ind., for emergency deliveries of spare parts and in connection with the flying school conducted by the Service Aviation, Training and Transportation Co., are back in Indiana after wintering in the south.

The first ship left Monroe, La., March 29, at 8 a. m., and made a graceful landing at Service field at 3:45 p. m., March 31.

TIMKEN SECURITIES LISTED ON DETROIT EXCHANGE.

The Timken-Detroit Axle Co. securities have been listed on the Detroit stock exchange by unanimous approval of the board of governors. The financial statements of the organization listed with the application shows assets of \$22,697,213 and a surplus of \$10,175,579 at the close of 1919. The corporation's outstanding \$3,000,000 of common stock par value, \$100, and \$5,000,000 of seven per cent cumulative preferred have been listed.

HIGHEST QUALITY BUILT CLAIMED
FOR NEW SERIES ACASON TRUCKS



Acason Five-Ton Truck Chassis, Fully Equipped with Dumping Body and Hydraulic Hoist.—A Contracting Outfit.

A SALES policy that is unusual as applied to power trucks, and which is based on its manufacturing policy or plan, has been adopted by the Acason Motor Truck Co., Detroit. The company is well known and substantially established, having for a number of years produced a series of trucks that have been recognized as having high quality when measured by engineering or service standards.

Its production has not been large when compared with the outputs of some of the leading concerns of the power vehicle industry, but it has consistently increased each year and the trucks have been so satisfactory to owners that they are rated as the best produced by manufacturers of standard types.

The trucks the company is now building are claimed by its engineers to be the most powerful machines built in America, this claim being made for each unit making up the series of five, which is to be one of the principal sales arguments. With this will be the claim for quality, for the company maintains that Acason trucks will be the highest quality produced.

The trucks are constructed to a standard design that has been carefully developed and which has been amply proven, with units produced by the leading specialists of the industry, and these units are the latest perfected products, carefully refined to meet the requirements of truck builders.

Claims Trucks Are Best Produced.

The company maintains that the trucks are the best that has ever been produced and that the manner of assembling these units insures exceptionally long service life; that it has been necessary to establish prices that are justified by the quality and the power, and if these are measured by units, the construction and the service obtainable—based on known results with Acason trucks—they will be found very moderate.

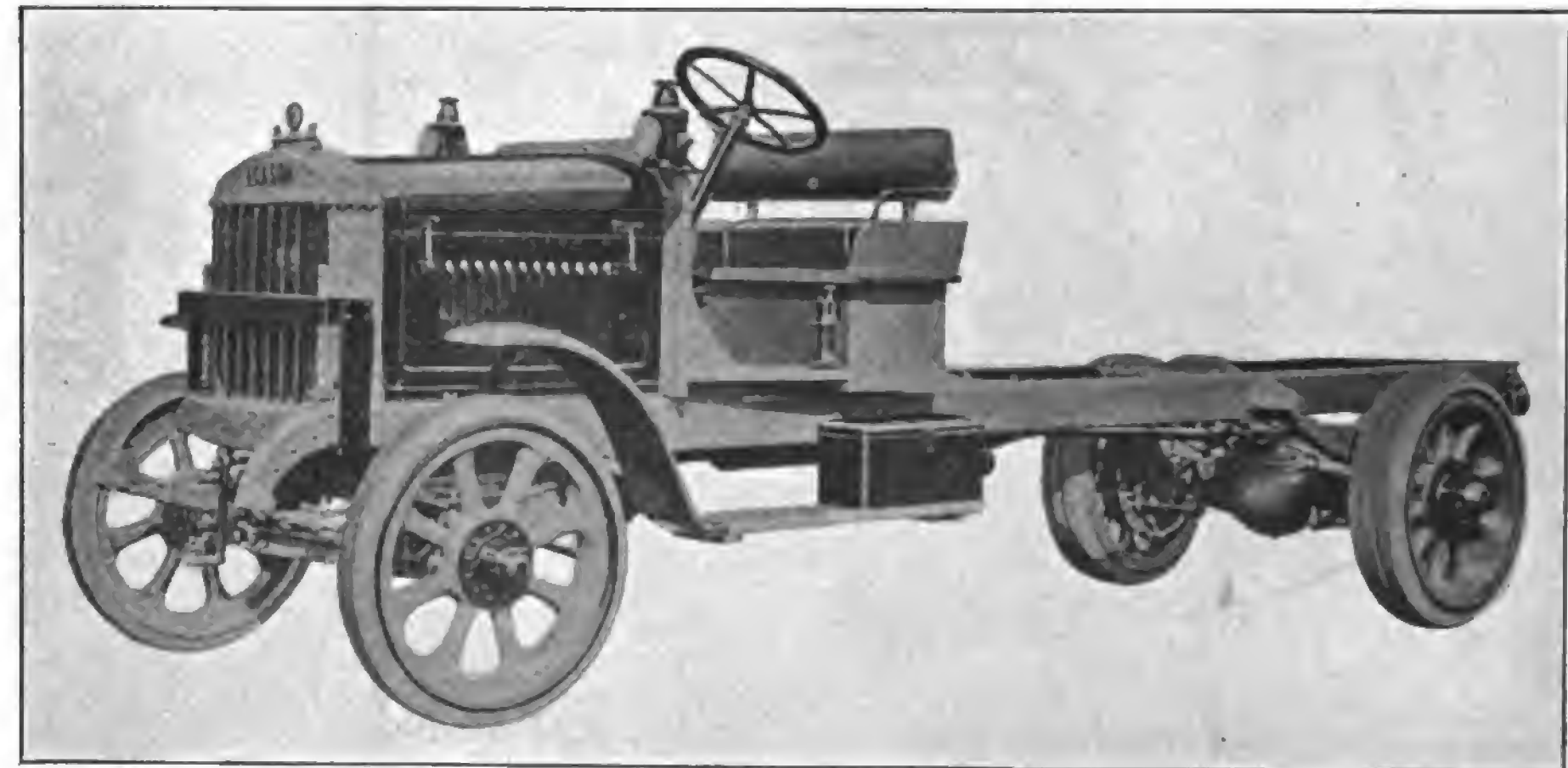
The Acason company builds chassis that are rated one, 1½, 2½, 3½ and five tons load capacities, and this series will be continued, for it has sufficient range

to meet the requirements of nearly all engaging in vehicle haulage. The machines are designed to have exceptionally large factors of safety and in any service ought to be very enduring.

The chassis are constructed with Waukesha engines, equipped with Eisemann high-tension magnetos fitted with impulse starters. Marvel carburetors and Waukesha governors; Borg & Beck dry plate clutches, Cotta transmission gearsets, Blood Bros. universal joints, Timken worm shaft and worm wheel rear axles, Timken front axles, Savage frames, Ross steering gears, Smith wheels on the three larger machines, and the chassis are lubricated by Alemite systems for supplying grease to all moving parts.

Some of the principal dimensions of the chassis are briefly shown by the following:

Size.....	Wheelbase.	Engine		Frame		Springs		Tires		Speed Miles an Hour
		Bore.....	Stroke.....	Depth.....	Web.....	Front.....	Rear.....	Front.....	Rear.....	
Five Ton	187-172	5	6 ¾	9	3	42x3	56x4	36x6	40x6d 40x12	14
3 ½ Ton	172-187	4 ½	6 ¾	7	3	42x3	56x3 ½	36x5	40x5d 40x10	16
2 ½ Ton	166-150	4 ¾	5 ¾	5 ¾	2 ½	42x2 ½	56x3	36x4	36x8	16
1 ½ Ton	142	3 ¾	5 ¾	...	...	...	...	36x3 ½	36x5	16
One Ton	142	3 ¾	5 ¾	...	...	...	...	36x3 ½	36x5	20

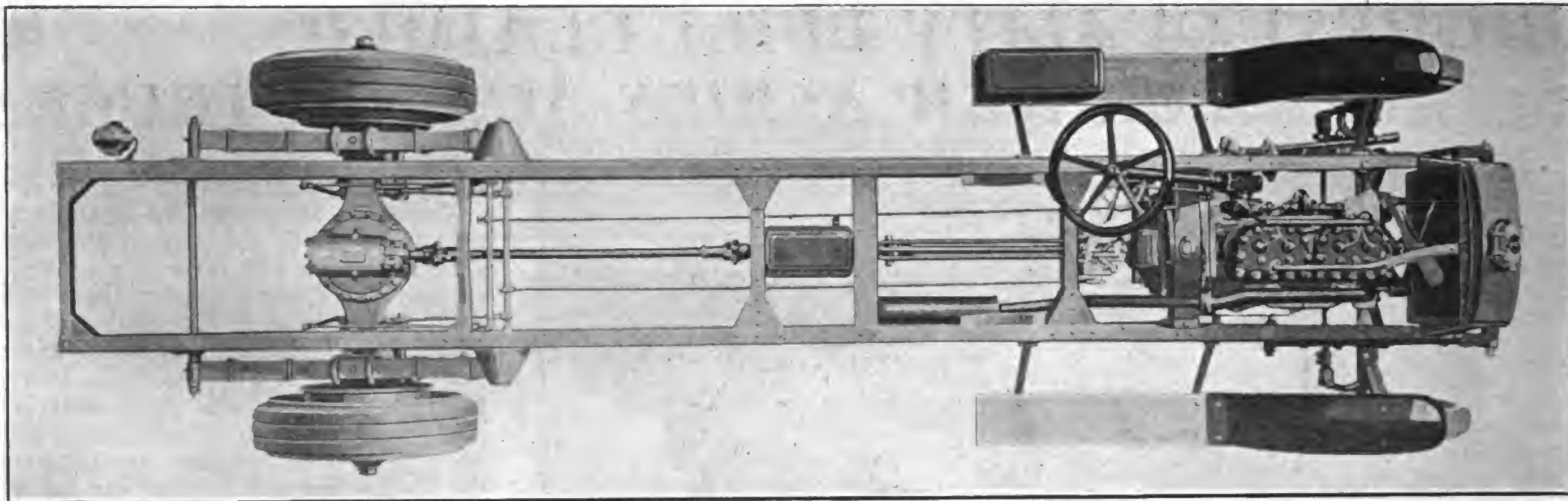


Acason 3½-Ton Complete Truck Chassis Typical of the New Series, Showing the Heavy Radiator Guard.

New Type Waukesha Engines.

The three largest of the engines are models EU, DU and CU in the order specified above, and these are developed for truck and tractor construction. They are four-cylinder, four-cycle, water-cooled, L-head design and the cylinders are cast in pairs with the water jackets integral. The cylinder head units are cast separately with integral water jackets. The water chambers are large and the intakes are at the bases and the outlets are centered over the combustion chambers so as to have the greatest cooling influence.

The crankcases are aluminum, cast in two sections, the upper being divided by vertical transverse webs that carry the center main bearings and the lower section includes the bases of the crank chambers and the oil reservoirs beneath them. Both sections are formed to have unusual depth and they are reinforced by ribs to insure against fracture. The oil reservoirs are at the rear of the lower sections. The front ends of the forward sections are extended so that with cover plates they house the timing gearsets. The bell housings, that enclose the flywheels, are separate castings, and with these are cast integral the rear support arms. The crankcase lower sections can be removed without taking the engines from the chassis. The forward supports of the engines are trunnions that are concentric with the crankshafts, and which are mounted on the forward frame member. The pistons are unusually long and very light and are each fitted with three compression rings.



Plan View of the Acason 3 1/2-Ton Chassis with Hood, Dash and Driver's Seat Removed, Showing the Power Plant, the Power Transmission System with Gearset Amidships, the Reinforced Frame and the Spring Suspension.

Engine Bearing Sizes Minimized.

The engines are constructed with separate intake and exhaust manifolds for the truck service. The crankshafts are a three-journal type that are drop forged from chrome nickel steel with the fly-wheel flanges integral and they are designed to have the main bearings the same length, so that but two sizes of bearings are required for the journals and the crankpins, this reducing the number of spares that are required for restoration to the smallest possible number.

The crankshafts are very large diameter, to obviate whipping, and they are heat treated and ground to size. The main bearing caps are unusually large and are reinforced by steel plates that insure against wear of the bearing metal. The main bearings are Fahrig metal. The connecting rods are I section heat treated drop forgings and the large ends are fitted with Fahrig metal bearings in bronze backs, and the wristpins of steel tube, hardened and ground, are clamped in the small rod ends by bolts that do not carry a load while the engines are running. The wristpins are very large and are mounted in bushings in the bosses of the pistons. The camshafts are single piece steel drop forgings, case hardened and ground, each carried on three journals, and the timing gears are large, have wide faces and are helical cut.

The valves are the usual poppet type, operating in long guides, and the valve tappets are a roller type, mounted in renewable cast iron guides. The tappets are hardened steel sleeves of large surface area, but very light and enduring.

Lubricating and Cooling Systems.

The engines are lubricated by gear pumps driven by the camshafts, the intakes of which are located in screened wells in the reservoirs, and by the removal of base plates the oil pumps may be taken out as assemblies for cleaning or inspection. The oil is forced from the reservoirs through heavy annealed tube manifolds to the three main bearings and the timing gearset, and pressure is regulated by a relief valve that is set at eight pounds maximum at 1000 revolutions a minute. From the bearings the oil is distributed to the crankpins through ducts drilled in the crankshaft and tubes to the wristpins, and the throwoff lubricates the cylinder and piston walls, the camshaft bearings, the cams and the valve tappets. The excess oil drains to the bases of the crank chambers and thence to the reservoirs.

The engines are cooled by circulations of water through the cylinder jackets forced by centrifugal pumps that are driven by outside shafts from the timing gearsets, and thence through radiators having cast top and bottom tanks and finned tube cooling sections. The water pumps have bronze impellers and bronze

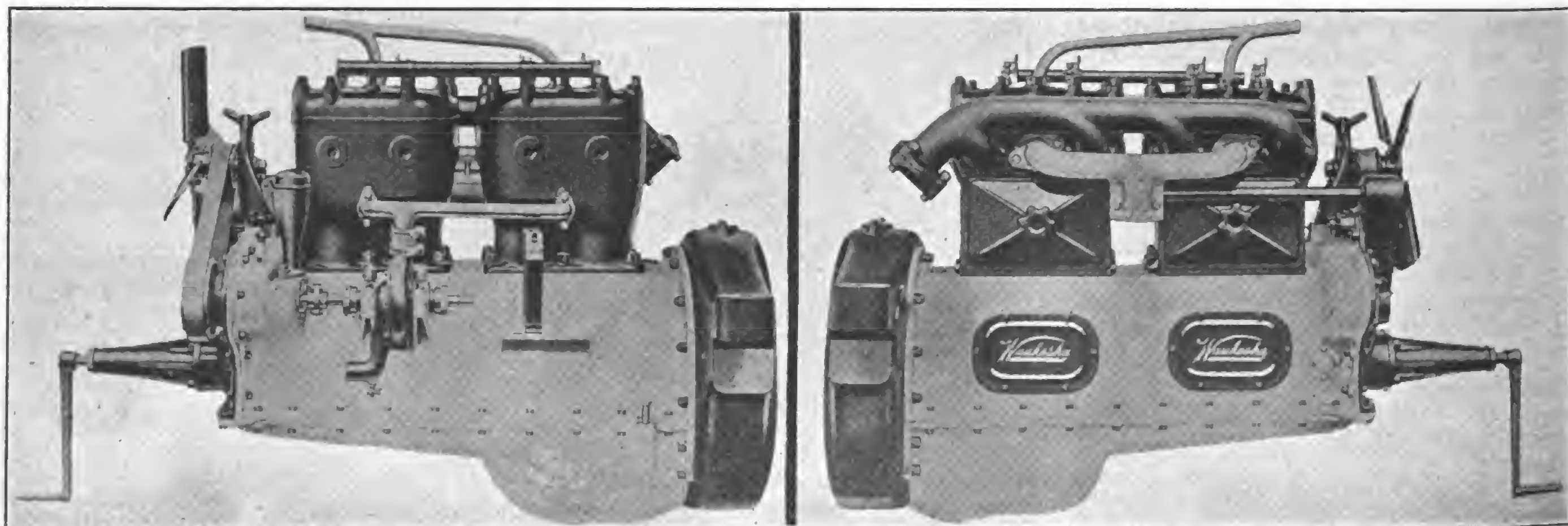
packing glands, and in the intake pipes are drain cocks by which the entire system can be drained. The radiators are so constructed that they may be quickly disassembled for repair or cleaning. Radiation is insured by large fans mounted on roller bearings in brackets on the timing gear cover plates that are adjustable for tension.

Very Accessible for Repairs.

The engines are very accessible for inspection or repair, there being two large hand holes at the right sides of the upper crankcase sections. All moving parts are fully enclosed and well lubricated. The designer of Waukesha engines has used many parts in their construction that are interchangeable, so that the number of spares required with different size units, such as might be found in standardized power truck equipment, is reduced to minimum.

The engines are governed by Waukesha patented centrifugal governors, which are adjustable to any speed, are sealed and self-lubricating, and are built integral with the assemblies, being operated by the timing gearsets. The Marvel carburetors are heated by the exhaust gas and the fuel is supplied in the three larger chassis from 24-gallon tanks located under the drivers' seats. The Elsemann magnetos are operated by hand.

The clutches are multiple disc type, the steel plates being faced with raybes-



The New Type Waukesha Engine Used in All Acason Trucks: Note the Separable Cylinder Heads, the Support Trunnion and Arms and the Easily Detachable Flywheel Housing and Lower Crankcase Section.

tos, that are enclosed in housings that are practically self-compensating. They require but little attention, the throwout bearings being lubricated by sight feed oilers located on the dashes. The transmission gearsets are a selective sliding gear type that are mounted amidships on three points, having four forward speed ratios and reverse. The gears are constantly in mesh and are engaged by sliding dog clutches and are immune from stripping. The cases have large cover plates that may be removed for work or inspection. The cases are adapted for the installation of power take-offs or tire pumps.

The clutch shafts, between the clutches and the transmission gearsets, and the driving shafts between the gearsets and the worm shafts of the Timken rear axles, are fitted with Blood Bros. universal joints, which are enclosed in leather boots packed with heavy grease. The rear axles are full floating types, having one-piece housings, and are fitted with Timken roller bearings. The differential gearsets are a bevel gear type. The units are lubricated from bath of oil in the central bowls. By removing the covers of the bowls the differentials, the worm wheels and worm shafts may be hoisted out as assemblies. The front axles are Timken steel drop forgings, with heavy steering knuckles, that are equipped with Timken roller bearings.

Frames and Other Chassis Details.

The frames are pressed steel channels of unusually deep sections and with wide

webs, with three central cross members (two of which support the transmission gearset), well reinforced and strongly gusseted, and with the additional reinforcement of the two rear spring tie rods and the engine mounting. The frames are defined as semi-flexible constructions and are suspended on semi-elliptic springs. Only the forward ends of the springs are pivoted, the rear ends being shackled, and the driving and braking stresses are taken by the rear springs. The wheels of the three larger chassis are Smith construction, and the rear sets are shod with either dual or single band solid tires, at the option of the buyer. The wheels of the two smaller chassis are wood, artillery type, and these are shod with single solid band tires as regular equipment, with pneumatic tires at the option of the purchasers. The steering gears are Ross, worm and nut design, which are located at the left side of all chassis. The control of the trucks are conventional, with two sets of internal expanding brakes operating in drums on the rear wheels.

Much attention has been given to chassis lubrication, and all the parts in moving contact are supplied with grease by Alemite systems, into which lubricant is forced by grease guns that will develop 500 pounds pressure maximum, and which obviates uncertainty as to volume of grease reaching any joint. There are no grease cups to loosen or be broken off, and dust and water are excluded

wherever there is wear. All of the steering gear linkage joints are enclosed in heavy leather boots that are packed with grease and so protected that wear is very slow.

Sold with Standard Equipment.

The chassis are sold with substantial radiator guards, drivers' seats, fenders, running boards, dash and tail lamps, jacks, tool boxes, horns and tool kits. The loading spaces of the three larger chassis are specified as 162 inches standard, and 120 when used for end dump discharge, for the five-ton units, 154 and 124 inches for the 3½-ton units, and 154 and 128 inches for the 2½-ton units. The prices are: Five tons, \$5850; 3½ tons, \$4900; 2½ tons, \$3850; 1½ tons, \$2650, and one ton, \$2400.

Of these chassis President H. W. Aca-son says: "These new models, in power, gear reduction and road speed, meet with the requirements for rapid inter-city transportation and the heavy work of excavating and road building. They are particularly adapted to the use of pneumatic cord tire equipment, as no change is necessary to use this to the best advantage. Our new models and new prices have no relation to what any other concern is doing, because we have had but one idea in mind during the development of this new series. This has been to build trucks of superior power, capacity and quality to anyone else in the market, and our new prices have been arrived at simply from our costs."

NEW ENGLAND TO BUILD 1000 MILES OF NEW ROADS.

A thousand miles of new roads will be built in New England this year, a big area of highways repaired and reconstructed and nearly a score of bridges erected at a cost of millions of dollars.

Connecticut will build 150 miles of highway and two bridges. Massachusetts will put in 100 miles of new roads and resurface about 50 miles. Rhode Island will spend only about \$250,000 for new roads, being forced because of poorly constructed highways in the past to expend about \$1,750,000 in maintenance of roads previously built.

Maine will spend \$1,000,000 in installing over 150 miles of new roads, and will also put up three big bridges. Vermont's programme is indefinite, but it is anticipated that \$400,000 will be expended for about 100 miles of improved roads and \$75,000 for bridge construction. New Hampshire will pay out over \$2,000,000 for work on 355 miles of unimproved highway and for patching up 958 miles of state highways. Hard surfaced roads are contemplated in all these states.

WOODEN TRAFFIC POST.

Street Commissioner William Frapwell of Morristown, N. J., has designed a new traffic post, made of wood, which will cost less than half what is asked for the metal product and will reduce the possibility of serious accident to the motorist and his vehicle.

Nation-Wide Charge of \$1 for Adjusting Carburetors

The National Automobile Chamber of Commerce and the National Automobile Dealers' association have learned that the dealers are willing to do their share in the campaign for gasoline economy by agreeing on a uniform flat rate for adjusting carburetors. It is anticipated that the fee fixed for the entire country will be \$1.

It is felt that a low rate will redound to the benefit of both owners and dealers. The latter will get into closer contact with his customer and may profit by securing repair work before the damage has got beyond repair. The owner will be able to keep his car in better trim and will save gas and often the buying of new parts.

PETERSBURG TO MOTORIZE.

Petersburg, Va., is one of the latest cities to follow the popular trend and take steps toward motorizing its fire department. It has been decided to purchase a triple combination fire engine and various other motor apparatus.

LONDON AUTO SHOW.

Oct. 7 to 27 have been fixed as the dates for the automobile show at the Olympia, London.

RAINIER SCHOOLS FOR TRUCK DRIVERS A SUCCESS.

Rainier schools for instruction in truck operation, now being conducted by Rainier distributors at Norfolk, Va.; Charleston, W. Va.; Charlotte, N. C.; Pittsburgh, Lynchburg, Va., and Knoxville, Tenn., are proving that this plan cuts the cost of truck transportation. The success of the project is vouched for by P. N. Lineberger, vice president of the Rainier Corporation, truck manufacturer, New York City.

The aim is to make good drivers who can prevent rather than cure trouble. The course comprises a general lecture and six weekly sessions. Naturally skilled mechanics are not made during this period, but the men are taught how to drive and maintain their truck equipment. They are shown how to detect and correct little troubles before they become big and how to make minor adjustments that keep the truck on the job. The gasoline and ignition systems, clutch and transmission, rear axle, brake and control groups are treated in a general way.

NON-COMBUSTIBLE TRUCK.

A Clydesdale truck, one of 40 apparently destroyed by fire recently at the Motor Garage Co.'s garage, Chicago, left the scene of the disaster under its own power and a week later was back on duty, but little the worse for its experience.

LONG DISTANCE HAULAGE AT HEIGHT

Railroads Will Bid High to Compete with Trucks

That the railroads under private ownership are not going to sit idly by and watch the motor trucks run off with their business is shown by the activity of one road which has sent solicitors to small towns near New York city urging shippers to send their goods over that road. Railroads generally are making investigations to see how much business has been lost and are devising plans to win it back. These roads have yards and sidings which they are anxious to keep busy, and despite the oft-repeated statements that the short haul is a losing proposition, they are after all business they can lay their hands on.

Transportation by truck has proven its efficiency during the war and holds such a firm place that all the king's horses and all the king's men cannot halt its progress. The fact remains that it is a helper rather than a competitor to the railroads, and the sooner the latter recognize this fact and commence to do business in a brotherly way the better for all concerned.

RURAL EXPRESS ENDORSED.

The National Association of State Marketing Officials endorsed the rural motor express and recommended that all states encourage the movement at a recent meeting in New York city.

TRUCK SALES \$227,695,328.

Internal revenue reports show that motor truck sales totalled \$227,695,328 in the last six months of 1919, the three per cent. tax amounting to \$6,830,859.84.

SHIP BY TRUCK WEEK IS GIVEN GRANGE ENDORSEMENT.

Thomas C. Atkeson, Washington representative and a leader in the National Grange, Patrons of Husbandry, has called upon grange secretaries by letter to get behind the coming National Ship by Truck-Good Roads week, May 17-22. The various granges are asked to take appropriate action toward participating in the event.

Mr. Atkeson's letter says in part: "It is conceded that there is a place for the motor truck on the farm and most particularly does this apply to the economic use of the motor truck by farm associations. To secure the most satisfactory and beneficial use of the motor truck the nation, the state, the county must have suitable permanently constructed roadbeds to insure motor truck operations from the producer to the consumer. Not only is the necessity for permanent highways apparent in this instance, but an improved highway is a step toward the improvement and consolidation of rural schools and the use of schools as rural social centers."

FISH SHIPPED FROM PORTLAND TO NEW YORK BY TRUCK.

The railroad strike and the resultant embargo on express entering New York City did not phase the wholesale fish dealers of Portland, Me., who on April 12 shipped 22,500 pounds of cod and had dock to New York City on motor trucks. This method of shipment, employed for the first time, proved highly successful.

ARKANSAS JOINS N. A. D. A.

The Arkansas Automobile Dealers' Association has affiliated with the national body.

Providence-New York Truck Hauls Are Made Daily

The roads from Boston to New York are a procession of motor trucks these days. This is due in but a small measure to the railroad strike. It's a regular thing.

The New England and Central states, like the rest of the country, are recognizing that highway transportation offers the one avenue to augment the unsatisfactory and inadequate transportation service given by railways and waterways.

A MOTOR TRUCK representative called a half-dozen trucking concerns in New England this week and found that every one of them had one or more trucks in New York, on the way, or just ready to start.

The Pierce-Arrow Trucking Company of R. I., Inc., with headquarters at Providence, had four of its 12 trucks in the metropolis with material from the Revere Rubber Company of Providence.

One company, which only operates three trucks, had two of them in New York and another about to start. A third had a vehicle in process of being loaded with machinery from the Narragansett Machinery Company, Pawtucket. Another had two trucks on the way and two others had a truck each headed for the big city.

All of these trucking companies make the New York run whenever called upon, which is about all the time. The railroad situation has, of course, made the demand greater for long distance hauls, but in many cases orders for long trips could not be filled.

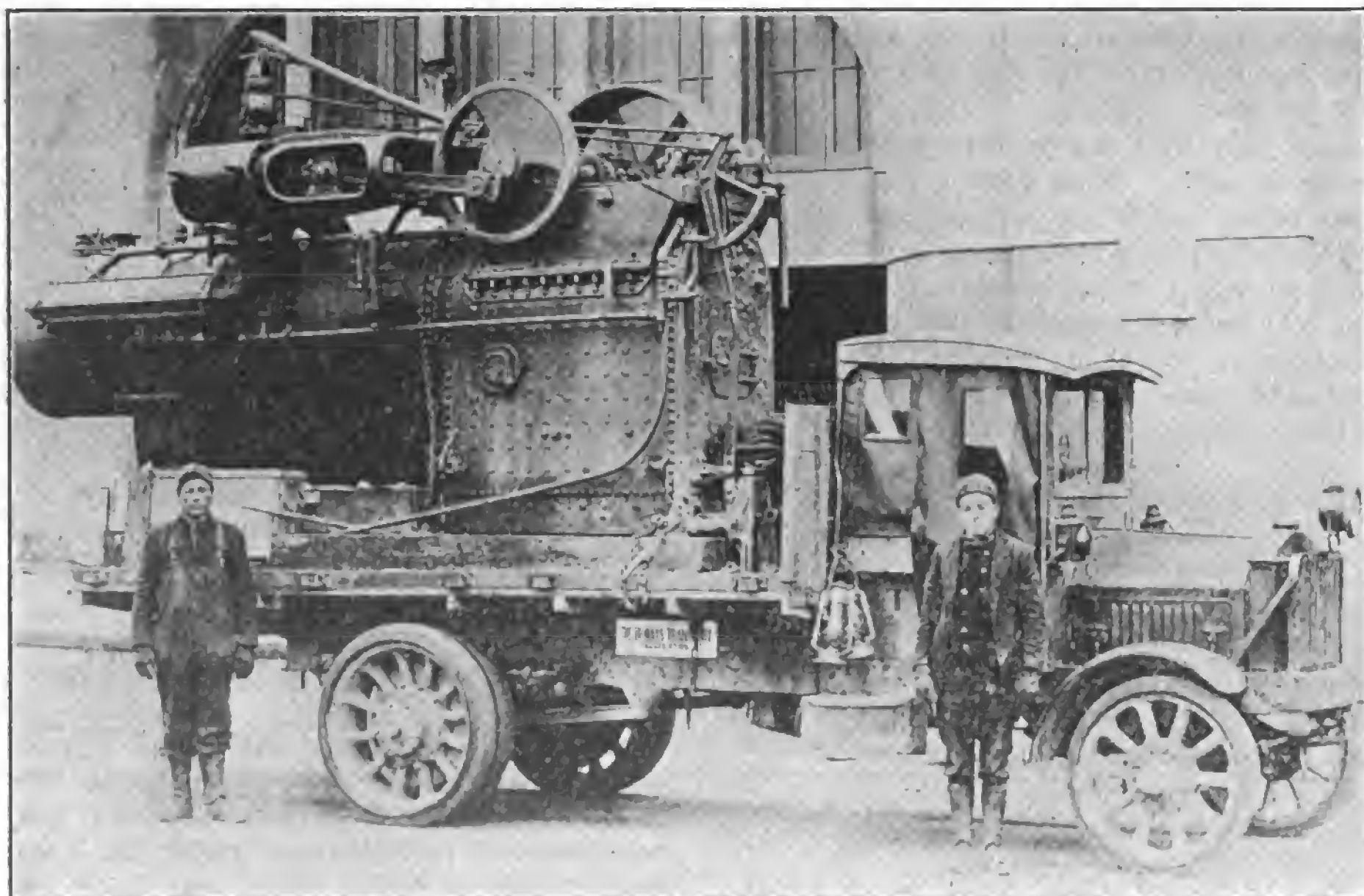
MOVES 8-TON BOILER ON A FEDERAL TRUCK.

A Federal truck, which had seen three years service, was recently picked by the Harrison Brothers of Toledo, O., to move a 16,200 pound boiler a distance of 70 miles, although the trucking company has but two Federals in its fleet of nine trucks.

The Austin Co. of Toledo wanted the boiler moved from Dunkirk to Toledo, but questioned the advisability of hauling it on a motor truck. Harrison Brothers assured the company that it would come through all right, and proved their contention, the Federal taking to its task as though it were an everyday load.

BAY STATE TRUCKS BUSY.

Trucks were kept busy in Newburyport, Mass., during the recent railroad tieup. The American Tire Fabric Co. sent a five ton truck loaded with automobile tire fabric to Akron, O., another concern sent a truck load of nursery supplies to Connecticut and others made long trips to keep factories running in various sections of New England



Federal Five-Ton Truck Owned by Harrison Bros., Toledo, O., with a Steam Boiler Weighing 16,200 Pounds That Was Hauled from Dunkirk, O., a Distance of 70 Miles.

Truck Manufacturers at Timken Detroit Conference

It was the unanimous opinion of 52 truck manufacturers who were recent guests of the Timken-Detroit Axle Co. at Detroit that the present method of giving trucks a definite rating, or a chassis rating, is best, and that any change would be a source of endless trouble for the truck builder and the parts maker. It was agreed that the attempt to convert passenger cars into trucks has been a failure. That there is a market for speed trucks of 1500 pounds capacity was the view of nearly all the manufacturers.

While the various problems of motor truck manufacturing and marketing were discussed at the informal session, the question uppermost in the minds of many of the guests repeatedly came to the surface. This was: "When can we get more axles?"

President A. R. Demory, General Manager Fred Glover and Sales Manager P. W. Hood were all heard on this topic. Due to the difficulty in securing quality materials, none was over optimistic. If contracts already signed are carried out, however, they promised an increase of from 12½ to 25 per cent in production this year and a 50 per cent increase in 1921.

S. A. E. SUMMER MEETING.

The Society of Automotive Engineers will hold its summer meeting at Ottawa Beach, Mich., June 21 to 25, inclusive. The best session ever held by the engineers is promised. Standards committee meetings will be held the first day and on the other days technical sessions will be held in the morning, sports and recreation in the afternoon and one-hour lectures on timely topics in the evening.

TO KILL INDEMNITY BILL.

It is generally understood that the bill in New York state which would require each automobile owner to file an indemnity bond of \$5000 with his registration application will not pass.

COLLEGE COURSE FOR THE BEST SHIP BY TRUCK ESSAY.

H. S. Firestone, originator and sponsor for the Ship-by-Truck movement, has offered a four years' university course as an award for the best essay submitted by a high school pupil in connection with Ship-by-Truck-Good Roads week, May 17-22. Judges appointed by the Federal Bureau of Education will pick the winner. The latter may choose his own college or university. The essays will be 500 words in length, and as school superintendents and principals everywhere are expected to co-operate, fully a million essays are due to be written. The subject will be "Ship-by-Trucks and Good Roads." This contest is expected to arouse national interest in the Ship-by-Truck Good Roads week movement.

TRUCKS SAVED PACKERS DURING RAILROAD STRIKE.

What promised to be the most serious transportation crisis in the history of Chicago was transformed into little more than a flurry during the recent railroad strike through the use of motor trucks. The packing industry was saved by putting large fleets of trucks on the job every community within 50 miles of the city being taken care of. Other industries which located incoming freight within 100 miles of the city dispatched trucks for their goods and got them in time to avert disaster.

CONNECTICUT LIMITS LOADS.

State Highway Commissioner Charles J. Bennett of Connecticut has issued a ruling that motor trucks be limited to a five-ton load on the gravel and macadam roads of the state. He alleges that wear that will necessitate repair expense of \$100,000, mostly by heavy motor truck loads, has been reported.

200,000 TRUCK PROSPECTS.

The Goodyear Tire & Rubber Co.'s "Motorize the Farm" bureau, basing its figures on 1919 sales in Wisconsin, estimates that there are 200,000 prospects for motor trucks in 1920. Wisconsin people bought 4028 motor trucks last year.

Open Car Shipments and Driveaways are Necessary

While the results of the visit of traffic officials of the National Automobile Chamber of Commerce to the various railroad headquarters for the purpose of regaining control of automobile cars for the industry's needs are already apparent, it is also clear that complete relief cannot be forthcoming and that manufacturers must resort to driveaways, open car shipments and every other available method to get their product to the consumer.

Railroad men have shown a willingness to give aid, but the freight situation is in such a clogged-up state that their best efforts will amount to little at this juncture. Cars are now moving more freely, however, and there should be a steady, if slow, improvement. Another important object achieved by the conference is a better understanding with the railroad people who are expected to show more consideration in the future.

Reports received indicate that shipments for the month of March will amount to 28,000 carloads compared with 23,744 carloads in March last year. Driveaways in March will probably amount to 46,000 machines, equal to an additional 13,000 carloads.

Shipments in January and February amounted to 46,812 carloads, compared with 36,191 carloads in the same period last year. In these two months 57,482 machines left the factories in driveaways. This would have made 16,500 carloads more.

TRUCK HAULS FREIGHT CAR.

Motor trucks have reached the point where they have turned the tables on freight cars, which used to haul them around the country. The other day at Medina, N. Y., W. J. Gallagher loaded a standard size 22-ton freight car aboard two trailers and hitched on a truck. He hauled the car through the streets of the city from one railroad siding to another more than two miles away. The truck carried a ballast of five tons of iron.



Group of 52 Representatives of Truck Manufacturers Assembled at the Plant of the Timken Detroit Axle Co., Detroit, to Consider Load Rating and Material Supplies.

PAST AND PROSPECTIVE TRUCK SHOWS

PLANS ALREADY IN MAKING FOR NEXT YEAR'S TRUCK SHOWS.

The truck section of the National Automobile Chamber of Commerce is already working on plans for next year's shows and something bigger and broader than a mere exhibition of trucks is in the wind. Opinions from the trade and experts are to be sought in order that the next shows will put all past expositions in the shade.

The feeling of optimism over what is possible next season was aroused by the splendid success scored at the Chicago and Philadelphia shows. In addition to good advertising and immediate business truck exhibitors got a rebate of 75 per cent. of the amount paid for spaces at New York and 72 per cent. at Chicago. The Chicago show was held at the height of an epidemic and, despite a cut in attendance, was a big winner from a business standpoint.

DANDY SAN ANTONIO SHOW.

San Antonio, Tex., is still boasting about the recent show put on by the Automobile Trades Association, which was a thing of beauty from an artistic and decorative point of view and was also a success commercially. It was one of the best lighted shows the industry has seen. Every inch of exhibition space was filled and double the amount might have been used. Automobiles, trucks, tractors, flying machines and electric lighting plants were shown, in quantity and quality.

TRUCK TOUR IN WISCONSIN.

A motor truck tour will be held through the richest farming and dairying districts of Wisconsin the week of June 21-26, plans for the event being arranged by the Milwaukee Sentinel. The possibilities of the truck as a time, labor and money saver on the farm will be shown. Trophies will be awarded to all trucks finishing on schedule time. The tour will be limited to vehicles from $\frac{3}{4}$ ton to $3\frac{1}{2}$ ton capacities.

LOS ANGELES ECONOMY RUN.

One of the most important economy contests in the country will be the fourth annual Los Angeles-Yosemite Valley Gasoline Economy run, May 7-8. The contest is open only to stock cars of Los Angeles dealers and decisions are based on ton mileage. The cars will probably be divided into three classes, according to price.

GLOVERSVILLE SHOW SCORES.

Although trucks and automotive equipment were consigned to the basement of the armory at the Gloversville, N. Y., show this month, they received much attention and many sales were reported. Space was so congested that a billiard room was used for three exhibits.

ANNUAL SOUTHERN AUTOMOBILE SHOW FOR ATLANTA.

A big annual show at Atlanta, Ga., to be the distinctive exhibition for the entire South, or at least the southeast, is being talked up by the dealers of that city. Atlanta is a real automobile center, more than 40,000 cars passing through the hands of agents or distributors in that city last year. Many automobile manufacturers have selected Atlanta as their southern headquarters. The event may not be organized this year, but it looks like a fixture, starting with 1921.

CONCENTRATE ON SHORT HAULS.

The Motor Truck Committee of the National Automobile Chamber of Commerce at its meeting early this month agreed that the aim of the truck industry should be to develop the short haul business, thereby aiding instead of opposing the railroads. All reports indicated unusually prosperous business.

HARRISBURG SHOWS 40 TRUCKS.

Forty motor trucks were shown at the show held at the Overland-Harrisburg service station at Harrisburg, Pa., the week of March 27 under the auspices of the Harrisburg Automobile Dealers' Association. There was a record-breaking attendance on each day of the exhibit.

SHOW BUILDING IN DETROIT.

The 1921 annual automobile show of the Detroit Automobile Dealers' Association will be held under the association's own roof if plans advocated at the annual meeting April 7 mature. A Coliseum project is favored and ample financial support has been assured.

K. C. TRUCK DEALERS ACTIVE.

The interests of the truck dealers of the Kansas City Car Dealers' Association will be cared for in the future by a special committee, which will study their special needs. Two matters to be taken up immediately are long trades and long time terms.

NEW TRUCK DIVISION.

Motor truck men will have their own division in the Milwaukee Automotive Dealers' Association, formerly the Milwaukee Automobile Dealers, Inc., but, like the passenger car division, will be a part of the parent association.

TRUCK SHOW IN IOWA.

The Des Moines Dealers' Association is already making plans for the truck show to be held in connection with the Iowa state fair late in August. Tours will also be conducted during the season.

PHILADELPHIA MOTOR TRUCKS TO TOUR FARMS.

A spring tour of farms by motor trucks, trailers and tractors is to be made under the auspices of the Philadelphia Motor Truck Association. The tour will take in Eastern Pennsylvania, Southern New Jersey, Delaware and Eastern Maryland. Two or three motor truck tours will be made in the territory for 60 miles around Philadelphia.

The object of these tours is not only to take the truck to the farmer, but also to increase direct sales, educate country dealers in how to sell trucks and engage new dealers. A farm tour in six western states last September resulted in \$20,000,000 new business.

Statistics show that there are 6,700,000 farms in the United States, of which 42 per cent. are of more than 100 acres. Modern methods of farming are needed to make these farms pay and it is up to truck owners to show the farmer what modern equipment can do.

URGE TRUCK SHOW BE NEARER CITY CAR EXHIBITS.

The National Association of Motor Truck Sales Managers heard an inspiring address at its Chicago meeting, March 26, from Arthur H. Kroh of the Goodyear company in which automotive men were urged to get behind a movement for diversified farming, motorized agriculture and greater production.

Discussion revealed that the majority seemed to favor holding a truck show at the same time as the New York and Chicago shows, but at points nearer the car exhibits than this year.

LOS ANGELES TRUCK SHOW.

While the Motor Car Dealers' Association of Los Angeles has voted not to hold a show this spring, there will be an exhibition of trucks and accessories, under auspices outside of the association. Business is so good that no show is needed at present to keep things humming. A new building of proper size for the running of a modern show is expected to be erected by fall and it is probable the association will conduct an exhibit at that time.

12 TRUCKS AT WILMINGTON.

A dozen trucks, 47 passenger cars and considerable auto equipment were shown at the Wilmington, N. C., show this month, which was staged in a tent, attracting dealers from several states as well as big gatherings at every session.

TRUCKS IN HARRISBURG SHOW

There were 67 exhibits of cars and trucks and 14 equipment displays at the April show at Harrisburg, Pa., and the event was a success from every standpoint.

WOLFENDEN YARNS TO WISCONSIN FROM MASSACHUSETTS BY TRUCK



The Pierce-Arrow Five-Tonner and the Packard 1 1/2-Ton Trucks Operated by R. Wolfenden & Sons, Attleboro, Mass., for General Works Haulage.

IN ORDER to keep its factory running, the Bradley Knitting Mills, Delavan, Wis., had to have its yarn from the Attleboro, Mass., plant of R. Wolfenden & Sons, commission dyers and bleachers, freight embargoes and other obstacles notwithstanding.

Hence a White five-ton motor truck, operated by the trucking department of the Globe Coal Co., Woonsocket, R. I., set out Tuesday, April 20, on one of the longest journeys ever negotiated by one of these modern highway freight haulers.

Blazoned across the top of each side of the truck were banners, which told the story: "14,000 pounds of yarn dyed by R. Wolfenden & Sons, Attleboro, Mass., en route to Bradley Knitting Mills, Delavan, Wis."

A Chamber of Commerce drive is going on in Woonsocket right now in which "civic pride" is the slogan. The Globe Coal Co. of which Telesphore Desrosiers, former alderman, and former Republican nominee for mayor, is owner, was anxious to see that Woonsocket was not left out in the cold and so when the truck passed through Woonsocket in the first stage of its journey from Attleboro, a second banner was added, which read: "Woonsocket, R. I., to Chicago, Ill., and Delavan, Wis."

The cargo of worsted yarns taken on the long jaunt is valued at nearly \$35,000, about \$2.50 per pound. The round trip covers a total of over 2300 miles. The contract price for the trip is \$2888.85, which is approximately \$2.40 per mile one way, or \$1.20 per mile for the entire route.

When the truck started on its outward run there was no assurance of a return load. Mr. Desrosiers was endeavoring to secure a load for the trip back through one of the leading tire companies and, if unsuccessful in this direction, will try to get his load through one of the Chambers of Commerce in the Illinois and Ohio centers, or some other agency.

1167.7 Miles Each Way.

The Globe Coal Co. was informed by experts that the distance each way is 1192 miles, but MOTOR TRUCK figures

show it to be 1167.7 miles, as follows: Attleboro to Worcester, 41 miles; Worcester to Springfield, 51; Springfield to Albany, 92; Albany to Utica, 95; Utica to Rochester, 138.8; Rochester to Erie, 163; Erie to Cleveland, 102; Cleveland to Toledo, 119; Toledo to South Bend, 166.4; South Bend to Chicago, 104.9; Chicago to Lake Geneva, 82.1; Lake Geneva to Delavan, 12.5.

Alfred Paradis, a Spanish war veteran and also a warrior in Philippine service, is the driver in charge of the trip. He is an expert mechanic and completely overhauled the truck before undertaking the long grind. New tires were installed at Springfield. The other driver is Albert Lapierre. Paradis has every confidence in the ability of his machine to finish the journey on time and without mishap. He has piloted the same vehicle over many rough routes, among which was a trip from Millville, Mass., to New York City for the United States Rubber Co. in the height of one of the winter's severest storms, his load being a 12-ton motor.

Round Trip in 20 Days.

Twenty days is allowed for the run

from Attleboro to Delavan and back, 2335.4 miles. The drivers plan to negotiate 150 miles per day, running about 12 hours each day. On this schedule they will go each way in eight days, a total of 16, but the extra four days have been thrown in for good measure.

The Globe Coal Co. trucks are running around Boston every day and it was this fact that brought them to the attention of T. A. Graves, dealer in woolen and worsteds, Summer street, that city, through whom the five-ton White was engaged for the Wisconsin jaunt.

There are nearly 20,000 pounds more of yarn ready for the Bradley Knitting mills at the Wolfenden plant and if the Woonsocket truck makes the trip according to specifications and the freight embargo continues, this consignment may be sent overland in the same way.

R. Wolfenden & Sons, one of the leading dyeing concerns of New England, is a staunch advocate of trucking service. The management viewed with pride the departure of the truck with its big cargo of Wolfenden-dyed yarns for Wisconsin and regretted the fact that one of its own trucks could not make the trip. Whatever possibility of this there may have been—and the possibility was small due to the steady demands on the three it has in service—was shattered by the disabling of one of its five-tonners.

How Trucks Save Time.

The Wolfendens saw the value and economy in trucks back in 1911, when they secured a chain-drive Pierce-Arrow. Now they have two five-ton Pierce-Arrows and a 1 1/2-ton Packard. "Today," said Harry Wolfenden of the firm, "we get our yarns, dye them and deliver them in the time it formerly took to get them into the plant. We'd feel lost and helpless without our trucks."

The Wolfenden trucks carry out a regular schedule, and while they cover only



Five-Ton White Truck, Owned by Globe Coal Co., Woonsocket, R. I., Before Starting from Attleboro, Mass., for Delavan, Wis., with a 14,000-Pound Load of Yarn.

southern New England, they contribute toward the delivery of goods to patrons of the concern at various points throughout the country extending to the Pacific coast. At Boston and Providence they meet steamers bearing consignments from the other end of the country and also deliver dyed yarns at these piers for shipment to industries at the nethermost ends of the United States.

Regular Runs to Boston.

One of the big Pierce-Arrows runs to Boston Mondays, Wednesdays and Fridays. It always has a load both ways, bringing the unscoured yarn to the Attleboro factory and returning it in all the colors of the rainbow either to a Boston customer or to the pier. One big Philadelphia firm ships a great quantity of goods addressed to "R. Wolfenden & Sons.

Boston." This is picked up at the wharf and taken to Attleboro, dyed and brought back to Boston, going by boat to Philadelphia. All this is done in less time than a railroad freight shipment from Philadelphia would consume in reaching Attleboro.

The big truck usually leaves Attleboro about 9 o'clock, gets in Boston at 12:30, leaving at 1:30 and getting home at 4:30. On Tuesdays and Thursdays, and quite often on Saturdays, this truck runs to either Newton, Needham or Waltham, Mass., bearing the raw yarn one way and the dyed product the other.

The other Pierce-Arrow goes to Providence on Mondays, Wednesdays and Fridays, delivering the dyed yarn to the mills or the pier and bringing back the uncolored fabric from the mills or from

the steamboat cargoes. On Tuesdays and Thursdays, and usually Saturdays, this truck runs to Woonsocket, an important industrial center, delivering the colored yarn and taking back the undyed goods for the Wolfenden process.

The 1½-ton Packard is used on short hauls, mostly in carrying goods to and from the local freight and express offices.

The period of the freight embargo has found many strange trucks lined up against the loading platform at the Wolfenden plant. Simon Ashley & Co. of New York have been sending their five-ton Packard over the road to Attleboro regularly and concerns in Plymouth, Winchendon, Mass., and other points have relied on their own trucks to do the work the railroads are unable to perform.

WANTS MOTOR TRANSPORT CORPS. SAYS GASOLINE WON WAR.

A separate Motor Transport Corps in the army reorganization now under consideration in Congress is strongly favored in resolutions adopted by Motor Transport Post, American Legion, New York. The Post intends to carry on the fight, although the joint committee of the House and Senate has unfavorably reported on this phase of the bill.

During the discussion one speaker emphatically declared that gasoline rather than gunpowder won the war. "Gasoline saved Paris twice," he said, "because the French Motor Transport Service was organized so that troop and supply movements could be handled on a large scale on short notice by one central authority."

It was the consensus of opinion that the Motor Transport Corps as it operated during the war was helpless to provide efficient transportation because it was considered as a service of supply and had no jurisdiction over operation.

RAILROADS WILL BUY 100,000 FREIGHT CARS IN 1920.

The railroads of the country will need \$600,000,000 this year to buy 100,000 freight cars, 2000 locomotives and 3000 passenger cars. What is more, the railroads will get it. The government, which allows the truck industry to travel on its own, will come across with \$300,000,000, through the transportation act. The other half will be furnished by the stronger roads or secured through loans. This information was made known through the meeting of the Association of Railway Executive at Chicago, April 10.

36,766 BAY STATE TRUCKS.

During the first three months of 1920 there was an increase of 22 per cent. in commercial vehicle registrations in Massachusetts, the number taking out licenses being 36,766.

TRUCKS TO AUSTRALIA.

Motor trucks will be unable to drive horse-drawn vehicles out of Australia until the roads are improved, the price of fuel oil reduced and a campaign of education carried on.

National Chamber of Commerce to Boom Road Building

April 28 will be the day on which highways will have their inning at the eighth annual meeting of the Chamber of Commerce of the United States at Atlantic City, April 26-28. George M. Graham will speak before the entire convention at 10 a. m. on "Highway Transportation and the Value of Its Services in Speeding Up Production."

A group meeting will be held at 2:30 p. m., presided over by F. A. Seiberling, chairman of the Chamber of Commerce Committee on Highways. Lieut. Gen. Robert Lee Bullard and President Windsor T. White of the White company will discuss "The War's Development of Motor Transportation" and J. F. Witt of Dallas, Tex., will talk on "Regulation of Highway Transportation."

"The Country's Highway Problem" will be gone into at length as follows:

The Federal Government's Part, J. A. McDonald, director, Bureau of Public Roads, Department of Agriculture; Roy D. Chapin, president, Hudson Motor Car Co.

The State's Part, W. A. Alsdorf, chairman, Ohio Good Roads Commission; A. G. Batchelder, executive chairman, American Automobile Association.

Motor transportation will also be taken up in detail by the following specialists:

The Farmer, Luke W. Duffey, chairman Good Roads Committee, Indianapolis Chamber of Commerce.

The Manufacturer, W. J. L. Banham, general traffic manager, Otis Elevator Co.

The Consumer, W. F. Knowles, director of extension for New Jersey.

TRAILERS IN INDIA.

While the only trailers used in Ceylon, India, up to the present time are those employed by the government in road construction, there is every indication that the favor with which the people of that district regard American motor trucks could well be extended to trailers. There are no restrictions on their use in that district.

TRUCKLESS, TRACTORLESS, TRAILERLESS, NEW YORK WEEPS.

Street Cleaning Commissioner Arnold B. MacStay of New York City has admitted that his department is away behind the times. What he means is that it lacks the necessary modern equipment, such as trucks, tractors and trailers.

Commissioner MacStay declares that he has been unable to obtain appropriations to bring his department up-to-date. He says the "toy" ash carts used in collecting ashes are totally inadequate. In stating that no progress has been made toward modernizing his department in a quarter of a century the commissioner says that he will soon present a report to the Board of Estimate that will "startle the town."

NEW MACK HEADQUARTERS.

The Mack International Motor Co. has leased for 10 years a handsome building on Broad street, New York City, now being erected by Alfred De Cozen of the De Cozen Motor Co. The Mack Truck Sales Co. is now located at 556 Ferry street and it is proposed by the parent concern to occupy the new building, which will have 30,000 square feet of floor space as a show room, stock room and service station and for offices. The building occupies the entire block from Miller to Vanderpool street and running back to New Jersey Railroad avenue, with the exception of the recently completed structure which houses the De Cozen company.

FREIGHT RATES TO COAST.

Proposed heavy freight rate increases on trucks and automobiles shipped to the Pacific coast are the subject of a protest made to the Interstate Commerce Commission by the National Automobile Chamber of Commerce.

TRACTORS FOR ARTILLERY.

A regiment of motor drawn artillery, each battery of which is equipped with four tractors, has been apportioned to Wisconsin.

INDUSTRIAL DEVELOPMENTS

EATON AXLE COMPANY TO DOUBLE CAPACITY IN FALL.

The Eaton Axle Co. factory, which is now being erected in Cleveland, will be among the largest in the world devoted exclusively to the manufacture of automobile truck and passenger car axles. The first buildings will be completed by May at a cost of \$1,000,000, and the plant will be supplying axles for commercial and passenger cars by early summer. The company will double its capacity by fall.

The Eaton company is capitalized at \$5,000,000 and President Eaton and V. V. Torbensen, head of the engineering department and inventor of the Torbensen axle, see an unprecedented demand for cars and, consequently, for axles, for years to come. Mr. Torbensen is America's pioneer axle manufacturer and was connected with the first concern to manufacture automobiles in the United States.

GARFORD COMPANY EXPANDS.

The Garford Motor Truck Co., at Lima, O., is building a large addition to its present plant, which will be devoted entirely to the progressive assembly of Garford trucks and will enable the company to meet the rapidly increasing demand for its product.

The new building will be 100 by 420 feet. It will have two full floors and be of concrete, steel and glass construction. It is to be ready for occupancy June 1 and promises to be one of the finest examples of up-to-date assembly methods in the country. The company hopes to double its output this year.

Every known labor saving device is to be installed in the new structure and the chassis will roll out under their own power, complete and ready for test.

TO MAKE 9000 MACK TRUCKS.

The International Motor Truck Corporation, New York City, looks for a gross business of \$35,000,000 this year and the fact that the concern is booked to capacity for months ahead indicates that its hopes will be realized. Last year's sales were \$22,000,000. About 9000 Mack trucks will be produced this year, a gain of 70 per cent. over the 1919 output of 5500. To meet the demand the corporation should double the number of trucks turned out last year.

THE VAN BRIGGLE TRAILER.

The recently organized Van Briggles Manufacturing Co. of Indianapolis has taken over the Bower Trailer Co. of Fowler, Ind., and its product will henceforth be put out as the Van Briggles trailer. Increased production will be in order and the factories of the company will be enlarged for that purpose.

AMERICAN GRINDER CO. IS RECAPITALIZED.

The country-wide call for Blackhawk Steel Socket Wrenches for automotive use has forced the American Grinder Co., Milwaukee, manufacturer of this product, to plan such expansion that recapitalization of the concern has been arranged. Three well known bankers, Messrs. Herbert, Herman and George Brumder and George Adam and Fred Mayer, owners of the F. Mayer Boot and Shoe Co., have become affiliated with the company and Herbert Brumder will serve as treasurer. A recent added feature to the Blackhawk Wrench makes this tool as near perfection as modern mechanics permit.

C. N. and F. W. Jones, a leading sales organization, with headquarters in Chicago, and branches in New York, Atlanta, Dallas, San Francisco, Los Angeles and Seattle, will market the product. This concern will sell the company's line of American hand and power grinders west of the Mississippi, while John H. Graham & Co. will sell these tools in the East and abroad.

HOOVEN TUBULAR RADIATOR HAS BEEN PERFECTED.

The Hooven Radiator Co., now housed in a large and commodious factory at 410-420 North Western avenue, Chicago, is ready to put on the market its perfected tubular radiator for heavy duty trucks and tractors, a durable and fine appearing radiator, which climaxes two years of study and experiments by Hooven engineers and is believed to be the last word in its line. Notable improvements bring this newest part to the highest degree of radiator efficiency.

The demand for Hooven Radiators has caused the output to jump from 35 a day to 1000 daily in a year, and the new factory which the call for its product forced the company to build is capable of doubling the present production. The Hooven is now the standard radiator on many passenger cars, trucks and tractors.

MORE PIERCE-ARROW TRUCKS.

The Pierce-Arrow Motor Car Co., Buffalo, netted \$2,491,070 in profits after deduction of charges and Federal taxes, according to its annual report. This is equivalent after deduction of preferred dividends to \$6.75 on the 250,000 shares of common stock of no par value. There is a surplus of \$1,378,570. Total assets and liabilities are \$23,765,703. Plans contemplate increased production both in trucks and passenger cars.

THE BOLLSTROM TRUCK.

Bollstrom Motors, Inc., St. Louis, Mich., has turned out its first four-wheel drive truck and production has been begun. J. B. Dick is the company's factory manager.

EISEMANN MAGNETO CORP. IS BUSY SIGNING CONTRACTS.

The Eisemann Magneto Corporation recently signed contracts for its product with the following truck manufacturing concerns: Denby Motor Truck Co., General Motors Truck Co., the Four-Wheel Drive Auto Co., Graham Brothers, Huffman Brothers, Triangle Motor Co., Reliance Motor Truck Co., Turnbull Motor Truck Co., Highway Motors Co., Eagle Motor Truck Corp., and Eastern Canada Motor Truck Corp., Ltd.

Contracts have been renewed with the Iowa Motor Truck Co., Indiana Motor Truck Co., U. S. Motor Truck Co., Hi-grade Motors Co., Famous Truck Co., Nash Motors Co., J. C. Wilson Co., Kissel Motor Car Co., Transport Motor Truck Co., General Motors Co., Acme Motor Truck Co., and Brockway Motor Truck Co.

The corporation's official service station, the Automotive Service Agency, San Francisco, has appointed two new sub-stations as follows: Borkman & Wagner, 2500 Webster street, Oakland, Cal., and Nutt Brothers, E. M. M. Service, Lindsay, Cal.

MACK TRUCKS ALTERED.

The International Motor Co., New York City, has altered its line of Mack "AC" truck models to conform with legislation in some states discriminating against certain capacities. The line, formerly made up of 3½, 5½ and 7½-ton sizes, now consists of 3½, five, 6½ and 7½-ton capacities. The 3½ and 7½-ton models remain the same as before. The former 5½-ton chassis has been modified to a five-ton rating and its overall width of 90½ inches cut down to 89½ inches. The new 6½-tonner is identical in design and layout as the other models in the "AC" line. This alteration of truck ratings now gives Mack the following tractor sizes: 7, 10, 13 and 15-ton capacities.

GMC TO INVADE ENGLAND.

The General Motors Corporation is making ready to enter the European field as a manufacturer of trucks and automobiles. The Ford Motor Co. has been in England several years and the Willys-Overland company is there through consolidation with the British interests in the Willys-Overland-Crossley, Ltd. Americans are also vital factors in H. R. Bean, Ltd., which has \$30,000,000 capital. In return the Rolls Royce Co. of England is to manufacture its product in the United States.

ACME BUILDS NEW WING.

Because of the prospect of a \$5,000,000 business this year the Acme Motor Truck Co., Cadillac, Mich., is building a new wing to its plant and also enlarging the office building.

NEW PLANTS AND PRODUCTION PROJECTS

DENBY INTERESTS BUY FULTON CO. AT AUCTION.

The factory and property of the Fulton Motor Truck Co. at Farmingdale, L. I., was purchased at an auction sale conducted by the receiver March 12 by the stockholders, combined with Garvin Denby and other financial interests. The price paid was \$290,000. Mr. Denby will be president and general manager of a newly formed Fulton Motors Corporation, in which he will have control. The capital of the new concern will be \$1,500,000 of common stock at \$10 par value and \$350,000 class B stock of no par value.

The representative of an exporter, who is said to have been looking for an eastern source of supply, forced the Denby interests to the \$290,000 figure at the auction, where the first bid was \$25,000.

The Fulton Motors Corporation, chartered in Delaware, will elect officers this month. It is known that all the directors will be motor truck men with an individual interest in the company, and who will head the various departments. The manufacture of the Fulton truck as at present designed will be continued and larger heavy duty models added. Big export orders have already been received. The present dealers will be retained. The working force is practically intact and production has already begun.

HERSCHELL-SPILLMAN COMPANY TO PUT OUT 100,000 ENGINES.

The Herschell-Spillman Motor Co. of North Tonawanda, N. Y., has completed expansion plans which will bring about an annual output of 100,000 engines. The incessant call for the firm's model 7000, 3½ by five, four-cylinder engine, and the new model 11,000, 3¼ by five, six-cylinder engine, has caused the company to eliminate all other sizes and types.

A large concrete, steel and brick four-story addition, 70 by 160 feet, has already been completed and a half million dollars worth of the most modern machinery is being installed. The production in plants now erected will amount to 60,000 engines, an annual output valued at \$10,000,000.

A second addition to cost \$175,000 will also be erected. This will add 40,000 engines to the output.

WHITE HICKORY COMPANY WILL MAKE MOTOR TRUCKS.

The march of progress is shown by the recent incorporation of the White Hickory Motor Truck Co., succeeding the White Hickory Wagon & Buggy Co., with offices at 385 Peachtree street, Atlanta, Ga. The company will turn out one, 1½, 2½ and 3½-ton trucks, to sell at \$2275, \$2575, \$3075 and \$3875 respectively. The original company had been in business for 40 years, but was not slow to recognize that the horse era has passed and the day of the truck is at hand.

DISTRIBUTORS AID IN BUILDING THE TRANSPORT TRUCKS.

The Transport Truck Co. will hold a congress of distributors annually, following the success scored by a meeting of leading dealers held recently at the company's magnificent new factory at Mount Pleasant, Mich. The visitors, who came from all sections of the country, inspected the new daylight factory and heard talks by representatives of parts manufacturers.

A potent reason for the meeting, however, was the company's desire to have its distributors inspect its latest models, a truck for 7000-pound load service. The distributors were invited to confer with the engineers and asked to make comments and suggestions on design and construction and other features which might appeal to the market the machine is to serve.

It is believed that the company's plan to take the distributors into its confidence and get the benefit of their experience in the actual working of the trucks is a move in the right direction and will bring good results. The convention ended with a banquet and the dealers went home enthused over the company and its product.

CHASE PLANS NEW ENGINE.

Herbert Chase has accepted a position with the Power Plants Corporation, an organization undertaking engine development and similar work. In his new capacity he will design an engine of the constant pressure type for heavy fuel.

Mr. Chase has been assistant secretary of the Society of Automotive Engineers for the past three years and is widely known in automotive circles.

NEW MACK BRANCH.

A new branch at 1426-1428 Central avenue, Cincinnati, has been opened by the International Motor Co. of New York, makers of Mack trucks, with G. K. Ross in charge. The branch will be known as the Mack-International Motor Truck Corporation and supersedes the James Kidney Co., Mack dealers in that territory.

INDIANA'S BIG BUY.

The Indiana Truck Corporation, Marion, Ind., will hereafter produce the Rutenber Motor Co. engines, models 38 and 40. The purchase of the Rutenber properties by the Indiana company confirms rumors among the trade for several months.

PRESS WORK FOR CASTINGS.

Press work is being substituted for castings in England following the recent molders' strike. The idea of this step is to enable non-union and unskilled workers to be employed on work now limited to skilled men.

VREELAND COMPANY TO HAVE A MILLION DOLLAR PLANT.

The Vreeland Motor Co. is to build a million dollar motor truck plant in Irvington, N. J., and plans are now ready for the first unit, which will be constructed at a cost of about \$350,000. It will be 280 by 300 feet and so arranged that the length can be extended to 600 feet. It will be of steel and tapestry brick. The plant will be served with a siding from the Lehigh Valley railroad.

Later the company will erect an assembling building of the saw tooth type, 200 by 250 feet, a two-story administration building, 50 by 180 feet, a two-story machine shop and a two-story building for repair work and for the storage of parts, each 40 by 150 feet. There will be an elaborate main entrance and drive way and all the construction will be modern to the last degree. The buildings will be so erected that they may be extended at will.

The new factory will be ready in August and in the meanwhile the company will occupy its present quarters in Irvington, building on the new site a necessary paint shop and testing plant to take care of the output from the present factory.

PAPER GASKET CONCERN IS GOING FORWARD.

The Springman Paper Products Co., doing a paper gasket business of a half million yearly, has doubled its facilities for production through the purchase of the plant of Schwanbeck Brothers at Detroit. The new property comprises about 50,000 square feet of floor space. This company, which also manufactures high grade gasket packing, began on a shoe string 14 years ago and is now one of the largest in its line. The officers are: President, Charles T. Springman; vice president, Lloyd H. Diehl; secretary, Russell Springman; treasurer, O. E. Werner.

TO MAKE PISTON RINGS.

The Universal Piston Ring Co. has been incorporated for \$100,000 and will manufacture its product at 1026 Charles street, Rockford, Ill., until permanent quarters are secured. The officers are: President, William Stenlund; vice president, G. W. Hamlin; treasurer, W. P. Burdick; manager, W. G. Burdick; secretary, Richard F. Clapp.

NAPOLEON COMPANY ELECTS.

The Napoleon Motors Co., Traverse City, Mich., has elected the following officers: President, W. J. Chase; vice president, W. G. Rath; secretary and treasurer, Frank Trude; directors, W. J. Chase, Frank Trude, W. G. Rath, C. D. Peet, J. W. Patchin, C. S. May and E. G. Arntz.

FACTORY ADDITIONS AND EXPANSIONS

F-W-D COMPANY TAKES OVER THE MENOMINEE TRUCK.

The entire ownership of the Menominee Motor Truck Co. of Menominee, Mich., has been taken over by stockholders of the F-W-D Auto Co. of Clintonville, Wis., and while the F-W-D plant will be used for the present, new buildings will be erected later to accommodate the increased operations. A \$500,000 corporation has been organized in Wisconsin to take over the Menominee company, a Michigan corporation. The name will be retained, but the concern will be officered by present officers and directors of the F-W-D company.

The Menominee truck will be continued in its present form, rounding out the F-W-D company's line of four-wheel drive commercial cars. The F-W-D company is now able to offer a full series of trucks to meet all requirements.

SALE OF TRUCKS TO ALLIES IS BASIS FOR SUIT.

Suit has been filed against the Thomas B. Jeffry Co. and the Nash Motors Co., Kenosha, Wis., by Chipman, Ltd., London, Eng., to recover \$880,000 alleged to be due as commission on motor car and truck sales. The plaintiff charges that trucks to the value of \$4,000,000 were sold to the Russian, English and French governments in violation of a sole right alleged to have been granted the English firm by the Jeffry Co. The Nash Co. is a party to the suit through taking over the business of the Jeffry Co. after the contract was made.

NEW GRANT DIRECTORS.

The Grant Motor Car Corporation, Cleveland, O., held its annual meeting recently at Richmond, Va., and added the following to the directorate: George S. Salzman, treasurer and production manager; R. D. Richards, the corporation assistant treasurer, and William R. Green, secretary of the Guardian Savings and Trust Co. An enameling plant which will care for 100 cars a day has been installed. The output of cars is now up to 40 a day and an early increase to 60 daily is anticipated.

PACKARD'S FOREIGN PLANS.

The Packard Motors Export Corporation has been formed to control Packard business throughout the world, outside of the United States and Canada. Alvan Macauley, president of the Packard Motor Car Co., is president, and Fred Cardway manager.

TRANSPORT ORDERS AHEAD.

The Transport Truck Co., Mt. Pleasant, Mich., has a production schedule of 1560 vehicles for the first six months of the year. The company has sold its output for months ahead, President M. A. Holmes announces.

NOVEL GARFORD SERVICE FOR MOTOR TRUCK OWNERS.

The Garford Motor Truck Co. of Lima, O., has taken an advance stride which will be appreciated by truck owners. This is the establishment of a department to gather authoritative information on the operation of motor trucks in order to obtain for owners the lowest cost per ton mile. It will be known as the transportation engineering department. A transportation engineer, who has spent his life in the trucking and hauling profession, is in charge.

The operation of Garford motor trucks in all parts of the country will be studied in detail, the investigation covering the maintenance, loading and routing problems, delivery methods, housing, repairing and driving. The department will then be able to recommend such changes in systems as are necessary to increase efficiency and cut costs.

FORM ATLAS TRUCK COMPANY.

Plans are making for the formation of the Atlas Truck Co. to take over the truck business of the Martin-Parry Corporation, which is forced by heavy demands to confine its activities to the manufacture of automobile bodies. Martin-Parry stockholders will receive stock for their interests and will also get the first chance at the other stock issued by the new concern, the success of which is assured by orders on hand now.

F W D FIRE TRUCK.

The Four Wheel Drive Auto Co. of Clintonville, Wis., is to market a new three-ton fire truck. The new machine contains an unusually powerful special type J Wisconsin engine, with a 5.1 in. bore and 5.5 in. stroke, developing 42 horse power, S. A. E. The type B rotary pump, driven through a two speed transmission gearset, has a capacity of 500 gallons at 120 pound pressure.

TRANSPORT TRUCKS ADVANCE.

The Transport Motor Truck Co., Mount Pleasant, Mich., announces advances on its product. The one ton model is advanced from \$1750 to \$1850; the 1½ ton from \$2050 to \$2250, and the 2½ ton truck from \$2585 to \$2780.

STEWART TRUCK PRICES.

The Stewart Motor Corporation, Buffalo, N. Y., has announced new prices for its models as follows: ¾ ton chassis, \$1350; one ton chassis, \$1655; 1¼ ton chassis, \$2250; two ton chassis, \$2875, and 3½ ton chassis, \$3895.

DEALERS' MORTGAGE FIRST.

South Carolina, through a supreme court decree, has decided that a dealer's chattel mortgage has precedence over a repairman's lien for work and materials.

CITY PRESENTS BUILDING TO IOWA TRUCK COMPANY.

The city of Ottumwa, Ia., recently displayed its faith in the motor truck industry and incidentally exemplified a commendable spirit of progress by presenting a building to the Iowa Motor Co., conditional upon the company remaining in the city for a specified number of years and maintaining a certain pay roll.

The building is of two stories, 225x300 feet. It was built a few years ago by a manufacturing concern not engaged in the trucking industry, which fell by the wayside. The hustling city fathers of Ottumwa thought the acquisition of a concern like the Iowa Motor Truck Co. would be a boon to the municipality, the gift to the company following.

The company anticipates that the increased facilities will enable it to put out 1000 trucks this year. Its output for the past year has been almost entirely taken by beet growers of the West.

FRANKLIN 1-TON TRUCK WILL BE READY THIS MONTH.

The H. H. Franklin Mfg. Co., Syracuse, N. Y., announces that its new one-ton truck will be ready to show its paces late this month. Air-cooling and a wood frame are among the features of construction. It is designed to have exceptional utility, be economical to operate, carry its load at high speed, do all-year work and be durable and reliable. It will be pneumatic tired and have a four-cylinder engine. It will be of unusually light weight.

A variety of bodies to meet all classes of trade will be built, including express, panel, stake and a convertible type especially suitable for farmers' requirements.

THE SCHWARTZ TRUCK.

The Schwartz Motor Truck Corporation, Reading, Pa., is beginning work on its plant, to be located on a recently acquired 10½-acre site. It will allow 90,000 square feet of floor space. The company is capitalized at \$1,500,000. Henry B. Schwartz is president and general manager.

TALK MAXWELL-HUPP MERGER.

Rumors of a proposed merger between the Maxwell Motor Car Co. and the Hupp Motor Co. have been flying around the New York stock market and have caused a jump in the Hupp stock. Other consolidations are also said to be in the air.

WATCHES TO PACKARD MEN.

President Alvin Macauley of the Packard Motor Car Co., Detroit, recently presented gold watches to 281 employees, who completed 10 years of service.

CAPITAL INCREASES AND MERGERS

BRISCOE AND BETHLEHEM FORCES TO CONSOLIDATE.

The Bethlehem Motors Corporation and the Briscoe Motors Corporation are on the eve of a merger, the details of which have not yet been announced. The Briscoe corporation is capitalized at \$6,000,000 and the Bethlehem corporation at \$800,000. The latter was incorporated in 1916 to manufacture motor trucks. Its plant is at East Allentown, Pa.

The Briscoe corporation was also incorporated in 1916, succeeding the Briscoe Motor Co., which previously had acquired control of the Mason Motor Co. of Waterloo, Ia.; Jackson Motor Parts and the Jackson plant of the Lewis Spring & Axle Co., Jackson, Mich. It controls six plants located in and near Jackson.

NASH MOTORS HAS OVER 1,000,000 SQUARE FEET OF FLOOR SPACE.

The call for Nash trucks and Nash Sixes has been so strong that the Nash Motors has been steadily enlarging its Kenosha, Wis., plant in past months. The concern now has 1,011,332 square feet of floor space, employs 5000 hands, uses 120 tons of coal daily and operates over 1500 productive machines and over 300 factory maintenance machines. This is outside of the Milwaukee plant, where the Nash Fours are produced. All the buildings are modern in every respect.

EXPECT STUDEBAKER SALES TO REACH \$100,000,000.

The Studebaker Corporation reports a total sales of \$66,383,307.34 last year and expects to reach the \$100,000,000 mark in 1920. The trend of business was shown in sales of \$38,900,000 the last half of the year against \$27,500,000 the first six months. New buildings erected in 1919 at a cost of \$8,000,000 will aid in the increased production. The net profit for the year was \$11,166,513.03.

BETHLEHEM PLANT GROWS.

The plant of the Bethlehem Motors Corporation, Allentown, Pa., will soon be one of the largest in the world devoted exclusively to the manufacture of commercial vehicles. Part of a huge hill was recently blasted away to make still more room, the debris being carted away in trucks made by the company. Additions are constantly being made to the already mammoth plant.

200 BODIES IN STOCK.

The Watkins Commercial Auto Body Co., Buffalo, N. Y., carries 200 auto truck bodies in stock at its Buffalo salesrooms and shops at all times. Special style bodies for all kinds of chassis are made. The company also specializes in delivery bodies for Ford chassis.

\$25,000,000 MORE CAPITAL FOR WILLYS-OVERLAND CO.

The Willys-Overland Co. authorized an increase of \$25,000,000 in common stock at a special meeting of stockholders held in Toledo, March 24, making the capital stock of the company \$100,000,000, of which \$25,000,000 is preferred. The new issue will allow expansion of the manufacturing program and provide facilities for greater economy in production of the present output.

While the notice to stockholders states that an increase of \$25,000,000 would be authorized in the form of preferred junior to the existing preferred, President John N. Willys announced that the officers of the company had decided not to ask for an additional eight per cent. issue at this time in view of changed conditions and in consideration of the interests of present preferred and common stockholders.

JUMPS TRAILER OUTPUT.

The Highway Trailer Co., Edgerton, Wis., is building another big factory addition, which will increase the daily output to 25 trailers. On March 1 the company had \$250,000 in orders for immediate delivery. The Continental Axle Co., an affiliated corporation, is producing 18 axles daily and is adding equipment that will triple this production by May 1. Joint branch offices have been opened at Cleveland and Toledo. James W. Monhall is general manager of both companies.

CONTINENTAL GETS \$5,000,000.

The net profits of the Continental Motors Corporation for the year ending Oct. 31, 1919, were \$3,425,725, and the company has borrowed \$5,000,000 on a series of notes maturing in from two to five years to finance the expansion made necessary by increasing business. The present production is reported to be 200,000 engines per year, its output for motor trucks being particularly large.

THE CLAROTTA CLUTCH.

The Clarotta Manufacturing Co., Milwaukee, Wis., has been incorporated for \$1,000,000 and will specialize in the making of an automobile clutch. A plant has been secured and 125 men are already at work turning out 200 clutches a day. The incorporators are: President O. G. Prier, W. A. Kuebler and Thomas C. Hanson.

REPUBLIC PRICES UP.

The Republic Motor Truck Co., Alma, Mich., has advanced prices as follows: One tonner, from \$1555 to \$1605; 1½ tonner, from \$1885 to \$2050; 2½ tonner, from \$2395 to \$2595, and 3½ tonner, from \$3595 to \$3795. These prices do not include the war tax.

OSHKOSH BACKS TRUCK.

The Oshkosh, Wis., Association of Commerce has headed off contemplated steps for removal from that city by the Oshkosh Motor Truck Co., the association forming a \$125,000 corporation to back the company. Stockholders and other citizens have joined in the project and the corporation will finance the purchase of a site and construction and equipment of a new factory to be completed by June 15. A site of 35 acres has been bought and work was begun April 1 on a factory building 80 by 300 feet and an office building, 40 by 60 feet. Room is left for a dozen or more similar units.

ENGINEERING CONCERNS MERGE.

The proposed merger of Westinghouse, Church, Kerr & Co., Inc., and Dwight P. Robinson & Co., Inc., has been put into effect and Dwight P. Robinson has been elected president of the former company, pending final completion of the merger and organization of the new company. General Guy E. Tripp retains his post as chairman of the board of directors until the new company is formally organized. The personnel of both organizations will be retained and the new concern should become one of the largest and most successful in the construction and engineering business.

DUPONTS HOLD GMC STOCK.

That 30.29 per cent., nearly one-third of the stock of the General Motors Corporation, is held by the E. I. DuPont DeNemours & Co., is shown in the annual report of the latter company. A total of 448,456 shares of General Motors for which the sum of \$48,758,252.53 was paid by the company is made up of a direct investment in 238,504 shares of General Motors and 159,115 shares of Chevrolet Motor Co. The latter, however, is figured to have a per share value of 1.3195 in General Motors stock, which gives an equity in the latter of 209,952 for the Chevrolet holdings.

SPICER CO. CAPITALIZATION.

The Spicer Manufacturing Co. of Detroit is planning to make its authorized capital 100,000 shares of eight per cent. preferred and 600,000 shares of no par common, exchanging the present outstanding common at the rate of four shares for one. The present authorized capital is \$1,500,000 eight per cent. preferred and 7,000,000 common of \$100 par value and 500,000 second preferred.

AN AUTO CABLE CODE.

A cable code of automobile terms which means a big saving in tolls is being agreed upon by American and British manufacturers.

COTTON WASTE DEALER HAULS WITHIN 30-MILE RADIUS WITH THREE TRUCKS

THE flow of cotton waste to the factory of the Ray Cotton Co., dealer in cotton and carded cotton, Woonsocket, R. I., is a continuous performance, thanks to the motor truck.

The Ray Cotton Co. was organized in 1835, but its longevity is the only thing about the concern that is antiquated. Six years ago it saw the economy of truck service and has since benefited by this modern method of transportation. Time and money beyond computation has been saved through the installation of truck service.

One of its three Packards, two of which are four-tonners and one a 4½-ton vehicle, is chain-driven and has been on the job for six years without a slip. All three trucks reported for duty regularly during the wild storms of the past winter, work being found for them around home on the few occasions when long trips were out of the question even for a good going truck. The Woonsocket-Manville five-mile jaunt, which defied the efforts of many vehicles, motor and horse-drawn, during the roughest weather periods, were not abandoned by the Ray trucks for a single day.

The company used to send a bunch of men to the various mills to collect and bale the cotton waste, which was then shipped by railroad, reaching the Woonsocket factory some time within a week. In recognition of the company's forwardness in securing trucks, and being themselves anxious to have waste hurried away, the mills now bale their own waste.

By the use of revolvers and whips the bales are loaded in jig time and the Ray truck carries only a driver and "striker." The trucks have therefore eliminated considerable help, in addition to saving time and keeping the import of waste steady for the sorting by the factory help.

The Ray company, which sorts or cards the cotton waste and then bales it for the market, gathers waste within a radius of 30 miles of Woonsocket. North Grosvenordale and Putnam, Conn.; Northbridge and Saundersville, Mass.,

and Warren, North Scituate and Adamsdale, R. I., are points from which the waste is collected.

Two of the three trucks are on the road every day. They have a regular schedule, going to Connecticut one day, Massachusetts the next and then some Rhode Island point the following day.

"We do not believe in the bonus system for drivers," said a mill official. "Our policy is to get good drivers and pay them good money. Such drivers do not need a bonus."

A Driver's Performance.

Referring to his daily records, which are kept on charts of the Service Recorder Co., Cleveland, the official pointed out some feats of driver Theodore (Shorty) Fafard on truck No. 3. This driver left at 6:30 a. m. for Warren, R. I., a distance of 27 miles, and was back at 10:55. After unloading he went to Northbridge, Mass., a distance of 16 miles, and brought back a load. Returning from the Northbridge trip he carried two loads, each consisting of 20 bales of cotton to the freight

house before putting up for the night, the latter task alone being almost a day's work.

The same driver made two trips to Georgiaville, R. I., by way of Providence, a total of 26 miles in a day. He left Woonsocket at 6:40 a. m., got into Georgiaville at 8:20, left there at 9:25, arriving back in Woonsocket at 11:15. He left Woonsocket at 12:15, reached Georgiaville at 1:25, left at 3:15 and was grooming his truck in the garage at 5:15. Another day he left for North Grosvenordale, Conn., at 6:30, reached there at 8:50, left at 9:50, got back to Woonsocket at 12:10 and made five hauls to the freight house during the afternoon. Because of the nature of its business the Ray Cotton Co. trucks seldom have an outgoing load.

The Packard trucks often carrying a five-ton load, have frequently hauled six tons and one of them brought a load of practically seven tons from the Paul Whitins Manufacturing Co. at Northbridge to the Woonsocket factory.



Typical Load of Waste Cotton on 4-Ton Packard Truck of Ray Cotton Company. Outfit Held Up in Street and Snapped by MOTOR TRUCK Photographer.

WOOD FOR AUTO INDUSTRY.

The National Automobile Chamber of Commerce is on the trail of the Forestry Service of the Department of Agriculture in the hope of ensuring a continued production of hard wood timber to meet the needs of the automobile industry. Investigations are being made and every effort will be bent toward keeping the supply coming.

KANSAS CITY ORGANIZING.

A motor truck division is planned by the Kansas City Motor Car Dealers' association. An organization of motor truck owners is also in the air. Garagemen in that city are also forming an association.

TRUCKS REPLACE BULLOCKS.

A market for motor trucks is being developed on the Sumatra east coast, where they can be used to transport crops to the railroads, but are not practicable for the longer runs. Their economic advantages over bullocks have been demonstrated. The prevalence of the foot-and-mouth disease among the bullocks has also helped in easing the way for their introduction in quantities.

AMERICANS AT SCOTCH SHOW.

There were a number of American exhibitors at the Scottish motor show in Glasgow, Jan. 24-31. American cars in Scotland bring double the prices quoted in the United States.

15,000 SEE UTICA SHOW.

The Utica Motor Car Co. and the Otis Motor Sales Co., distributors of Atterbury and Reo trucks and Cadillac and Reo passenger cars, recently put on an auto show in Utica, N. Y., which was attended by over 15,000 people. It was the fifth annual exhibit by these concerns. About 50 cars were shown, together with \$50,000 worth of factory tested service parts. Music, dancing and decorations added to the attractiveness.

PORTUGAL LIMITS TRUCKS.

Portugal has placed a limit on the number of trucks which can be taken into that country, this decision affecting a number of American manufacturers.

INDUSTRIAL PROMOTION PROJECTS

Lowden Pleads For Uniform Motor Vehicle Law

Governor Frank O. Lowden of Illinois, one of the leading candidates for the Republican nomination for president, in a recent address to the Illinois Automotive Trade Association pleaded for a uniformity in state motor vehicle laws, Gov. Lowden said in part:

"The automotive industry has become a national industry. It ignores state lines. There is no question in the world but we have got to work out some sort of a plan by which we can get uniform regulation of motor cars as between the different states. It is perfectly absurd for one to have to consult the statute books when he crosses that invisible boundary between one state and another to find out whether he can expect to escape jail safely or not.

"With a great state organization, merging into a great national organization, it ought to be possible to secure uniform legislation as between the different states in this great industry, because there is no one motor car in a thousand that has its permanent habitat in any one state. You don't know where it will be from week to week."

AUTOMOBILE INSURANCE.

Insurance men apparently are not going to allow automobile manufacturers to delve into the insurance field without a vigorous protest. A loud howl against the activities of the General Exchange Corp., New York city, has made known the entrance into the automobile insurance field of the General Motors Corp., which aims to lower the cost of insurance on its lines.

F-W-D TRUCK TAKES THE PLACE OF LOCOMOTIVE.

An unusual and yet very practical use is made of an F-W-D truck chassis equipped with a passenger body by the Palatine, Lake Zurich & Wauconda Railroad Co., on its tracks between Palatine and Wauconda, Ill. It is used as a unit to replace a locomotive and car, being far more economically operated, and practically the only change necessary was to change the road wheels for flanged wheels.

The distance between terminals is 16 miles, and on this the truck unit makes regular runs during the day, a part of the time hauling a trailer, loaded with freight and luggage weighing up to five tons. The track at one point ascends a grade of seven per cent. Without the trailer the round trip is made on six gallons of gasoline.

Of the service obtained Vice President and General Manager Thomas J. Lee of the road stated in a recent letter: "I think there is a great field for the truck which will operate successfully on a railroad, as there are about 250 short lines in this country, which would be in need of them if the right machine were built."

The Butler County Railroad is operating a similar equipped railroad between Fergus, Mo., and Tipperary, Ark.

TRUCK EXPRESS IN CANADA.

The first motor truck express service in Canada is planned to be put in operation immediately between Hamilton and St. Catharines by the Dominion Express Co. of Hamilton, Ont. The arrangements call for two trips in both directions daily, timed in accordance with the arrival and departure of trains. The motor service is expected to expedite delivery and take care of the company's greatly increased business.

One Association of All Automotive Interests?

The rapid growth of automobile organizations shows a decided trend toward a national organization representing all branches of the industry. State organizations have been formed recently in Illinois and New Jersey and many others are in prospect. It is intended to band these together in a national body.

It is possible that the National Automobile Dealers' Association will be the unit about which the nation-wide association will be built. This association is now limited to dealers, but there is every prospect that its scope may be enlarged and all engaged in the trade admitted.

Telling the benefits of a state body, Governor Frank O. Lowden, a presidential possibility, recently sounded the keynote of the idea in an address to the Illinois Automotive Trade Association when he said: "If you have a strong and powerful organization you will find it very much more easy to have your views given expression by public officials than you would otherwise. You are going to have more or less to do with legislatures in the future, as I happen to know. It will be of immense value if, when half a dozen of you come down here, and the legislature is in session, you can say that you represent the entire industry of this state; not simply one branch, but all branches." He declared similar benefits would accrue from a national organization.

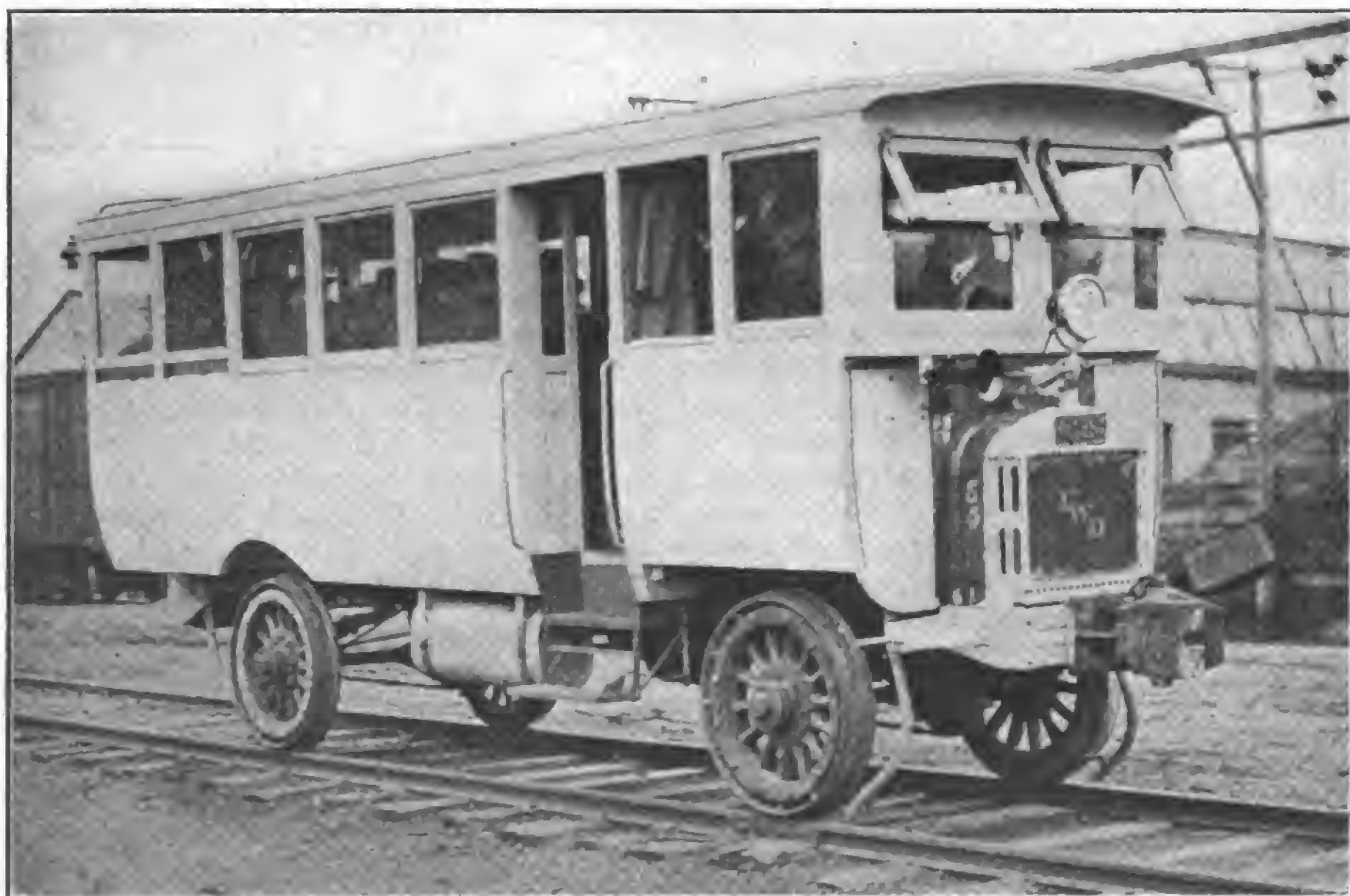
SEES TRUCK AS HELPER, NOT A RIVAL TO RAILROADS.

R. E. Fulton, vice president of the International Motor Corporation, manufacturer of Mack trucks, in a recent plea for the extension of the rural motor express, brings out the interesting fact that the gross cost of shipping 100 pounds of freight from New York City to Newark, N. J., a distance of nine miles, including teaming charges on both ends, is 91 cents by railroad and 15 cents by motor truck. The shipment by railroad takes days and by truck a few hours.

Mr. Fulton supports the belief that the truck is an indispensable supplement to the railroads, rather than a competitor. He maintains that short hauls are unprofitable to the railroads, which need the trucks to feed them tonnage from previously undeveloped sections, to relieve congestion at terminals and to release freight cars for long distance haulage.

NO CHANCE FOR FENDER ACT.

Indications point to a dismal failure for the ordinance proposed in New York city requiring trucks to adopt a scoop type fender.



F-W-D Truck Chassis with Passenger Body and Flanged Wheels Used for Passenger and Freight Traffic on the Palatine, Lake Zurich & Wauconda Railroad.

FROM MANY ANGLES OF VIEW

March Record Output of Industry Due to Truck Use

Truck trains which brought materials from distant points enabled Detroit manufacturers in March to exceed the production of any other month in their history by 20 per cent. The total output of passenger cars for the month was estimated at 176,831. The figures on the truck production are not available, but this phase of the industry also enjoyed a record month. It is confidently anticipated, however, that the March record will be surpassed this month.

TRUCKS BRING COLE MOTORS THROUGH DESPITE STRIKE.

The "outlaw" railroad strike failed to halt the flow of motors for the Cole Aero-Eight from Detroit to the company's Indianapolis plant, a fleet of motor trucks jumping into the breach, thanks to the foresight of E. J. Giddings, Cole traffic manager.

Mr. Giddings was in Detroit at the first sign of trouble. He got every freight car in sight and his shipment of motors reached Toledo, where a new storm broke, the yardmen and switchmen there joining the strike. Mr. Giddings had looked for such a contingency and had hired all the motor trucks owned by one of the big highway companies operating out of Toledo. The truck train went through without a hitch and the Indianapolis factory never slipped a cog.

RUBBER CORPORATION.

The Rubber Corporation of America, capitalized at \$2,000,000, is to take over the sale of all products of the Empire Rubber & Tire Co., Trenton, N. J., the Sterling Tire Corp., Rutherford, N. J., and another concern in the Middle West. The company will maintain warehouse facilities at Boston, New York, Philadelphia, Atlanta, Cleveland, Chicago, Kansas City and San Francisco.

CARS TO SOUTH BY WATER.

The shortage of freight cars for the transportation of automobiles has been relieved to some extent by shipments to the South by water from Cincinnati. The machines are shipped "set up" and at one-half the railroad freight rates. Cars shipped and awaiting shipment by this route are valued at \$2,400,000.

TRUCKS ON GLIDDEN TOUR.

A class for pneumatic tired trucks has been included in the Glidden tour which is to start from New York to San Francisco next September. Five prominent tire manufacturers have been invited to demonstrate their product in this way.

FREMONT CORPORATION WILL MAKE PASSENGER CARS.

The Fremont Motors Corp., with capital of \$2,000,000, all common of \$10 par, of which \$250,000 has been paid in, and the balance recently offered publicly, is now engaged at its Fremont, O., plant in turning out a six cylinder car, for which deliveries will begin immediately. The list price is \$1685. A yearly production of 2000 cars is scheduled.

The corporation has secured the plant built some years ago by the Burford Motor Truck Co. and later used by the Taylor Motor Truck Co. The company has disposed of its material for motor truck construction, although this branch of the industry may be pursued later. The factory will be considerably enlarged this summer.

R. T. Walsh, formerly with the Maxwell, Briscoe and King companies, is the president of the corporation. Fred M. Guy is secretary and is credited with designing the car to be produced by the company.

NEW TRUCK BODY PLANT.

The J. M. Karwisch Wagon Works, Atlanta, Ga., manufacturer of Karwisch truck bodies, is installed in its new plant, which is double the size of the old factory and has 33,000 square feet of floor space. The company makes commercial truck bodies to the buyers' specifications. Much of the machinery in use is the invention of President John M. Karwisch. Robert C. Hackman is vice president of the company.

TO MAKE COMMERCIAL TRUCKS.

The Commercial Truck Co. of America has purchased 42 acres of land in Philadelphia and will immediately build two large structures, the first units of a large plant.

ELECTRIC TRUCK COMPANY.

The Binghamton Electric Truck Co., Binghamton, N. Y., has incorporated with \$200,000 capital.

Truck Trains Kept Clark Shop Busy During Strike

The Clark Equipment Co.'s yards at Buchanan, Mich., showed equal activity to the ordinary railroad freight terminal during the "rebel" railway strike, truck trains coming and going with the regularity of railroad schedules. In every way the truck proved up to the task of substituting for freight transportation. Incidentally, the Clark Equipment Co. was enabled to maintain practically un-interrupted production.

This was accomplished through the co-operation of the factory and its customers. Incoming truck trains picked up supplies en route and brought them to Buchanan, returning to their own plants with cargoes of Clark axles and steel disc wheels. The trains came from Kenosha, Wis., Saginaw and Mount Pleasant, Mich., and other cities where companies using the Clark trucks are located.

ENGINES FOR GRANT MOTORS.

The Grant Motors Corp., Cleveland, has taken over the H. J. Walker Mfg. Co., buying the stock of H. J. Walker, organizer and controlling stockholder. The Walker Co. has a capital of 120,000 shares, no par value, which are selling at \$25. The Grant Co. will use 80 of the 150 engines its subsidiary company is turning out daily. The rest will be sold. The Walker Co. will also turn out auto parts and do jobbing work. The two plants are convenient to each other, thus eliminating moving expense.

GENERAL MOTORS REPORT.

The 1919 report of the General Motors has been issued and shows a net profit after deducting taxes, etc., of \$60,517,519, which is equal to \$36.37 a share on the \$153,411,000 common stock, the preferred dividend being \$1,032,376. This compares with \$8.75 a share earned on \$147,379,900 common in 1918.



Train of Trucks That Hauled a Big Consignment of Car Engines from Detroit to Indianapolis During the Strike of Switchmen's Union Outlaws.

ACTIVITIES OF PLANT PERSONNEL

J. H. THOMPSON F-W-D NEW YORK BRANCH MANAGER.

The interests of the Four Wheel Drive Auto Co., Clintonville, Wis., manufacturer of F-W-D trucks, in the east are



J. H. Thompson, Manager of the F-W-D Factory Branch at New York City.

now directed by J. H. Thompson, manager of the factory branch recently established at 438-40 East 149th street, New York City. From this branch the distributors and dealers in a territory that includes New England and as far south as Baltimore will be served. It has been equipped with facilities for sales, warehousing and office work, as well as a service station, which will be operated to meet the requirements of F-W-D owners and truck owners generally. The company has spared no expense to make this branch turn out work that will be equal to that of the factory and to develop servicing and sales organizations that will be efficient and productive.

Mr. Thompson has had broad experience, being first associated with the Babcock Electric Carriage Co. at Buffalo, for which he was for a number of years manager and territorial agent. Later on he was connected with the sales organizations of the General Motors Corp., and the Mercury Manfg. Co., Chicago, manufacturer of trucks and tractors. He is developing the branch organizations to maintain the broad policies of the company.

\$72,059 FOR MUNGER.

Louis de F. Munger has been awarded \$72,059 through a special master's report as balance on his judgment of two years ago against the Perlman Rim Corp., which through its reorganization into the Jaxon Steel Products Co., is now a subsidiary of the General Motors Corp.

R. S. ALLEN, VICE PRESIDENT OF THE DURATEX CO.

The Duratex Co., Newark, N. J., recently took two important steps in a broad expansion movement through the appointment of Ralph S. Allen, general sales manager, as director and vice president, and the breaking of ground for large additions to the already immense factory buildings. The new structures will allow 100,000 more square feet of floor space.

Mr. Allen has long held a high place in the automotive industry, having been sales manager for the Wagner Electric Co., Detroit, and also prominently connected with Delco and other well known accessory manufacturers. He has played a big part in the recent forward march of the organization.

The company has established branch offices in the principal distributing centers like Detroit and Chicago and has named representatives for foreign countries, where the call for Duratex products is being sounded in rapidly increasing volume. A half dozen European cars and one large French railroad is being equipped with Duratex, while more than a score of American automobile manufacturers, including many of the leading companies, have adopted the Duratex as standard upholstery and top equipment.

HANDLES HALL TRUCKS IN WEST.

The Lewis-Hall Motor Corporation, Detroit, has named I. B. Meers as western sales manager. He will have supervision over the sales of all Hall trucks west of the Rockies. He has been with the Panhard Motors Co. as general sales manager, but now returns to his old stamping grounds, as he represented the King Motor Car Co. on the Pacific coast for four years previous to the war.



H. G. Edwards, Southeastern District Manager, Acason Motor Truck Co.

DITTMER GEAR AGENT.

The Dittmer Gear & Manufacturing Co. of Lockport, N. Y., has engaged L. M. Baker, supervisor of sales of the motor equipment division of the Hyatt Roller



L. M. Baker, Michigan Sales Agent, Dittmer Gear & Mfg. Co., Detroit.

Bearing Co., as its representative in the state of Michigan, with headquarters at Detroit. The Dittmer Co. was recently formed by men of high standing in gear world.

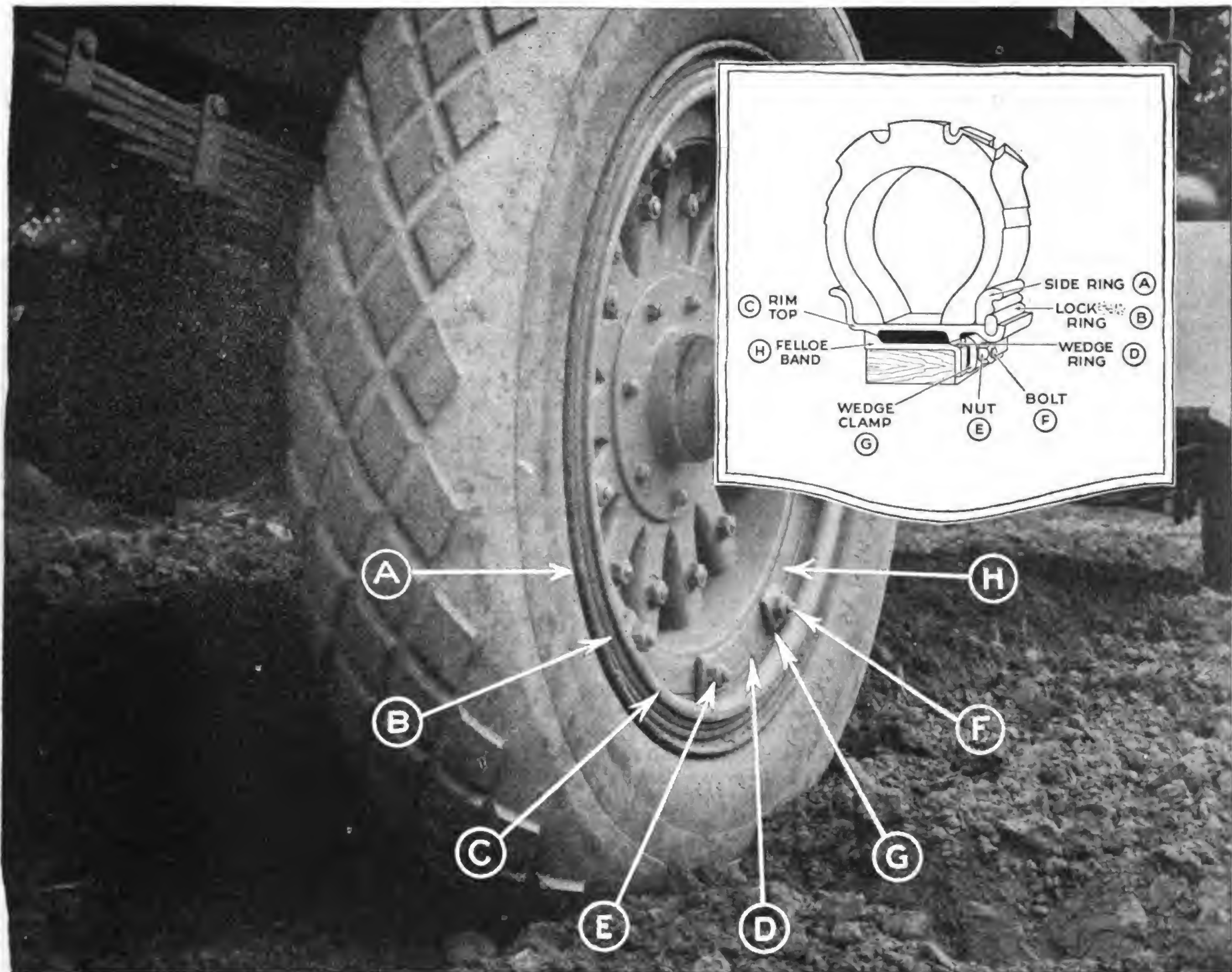
Mr. Baker was formerly associated with the Bearings Service Co. and the United Motors Service, Inc., and is an expert in his field.

TUCKER HEADS OLDSMOBILE SALES ORGANIZATION.

Charles A. Tucker has been appointed general sales manager of the Olds Motor Works, Lansing, Mich. Mr. Tucker has been, for a number of years, president and general manager of the Nebraska Oldsmobile Co. of Omaha, and his phenomenal success in establishing this business and developing it into one of the most important Oldsmobile distributing points in the country, bespeaks for him a sales and executive ability that augurs well for his success in his new position.

STANDARD'S NEW BOOMER.

The Standard Motor Truck Co. has placed George A. Stracks in charge of its advertising department. Mr. Stracks is widely known, having conducted a retail agency in Saginaw, Mich., being at one time connected with the Campbell-Ewald Co. and during the war playing a prominent part in getting out several camp newspapers. He was also an instructor of photography for the air service.



Copyright 1920, by The Goodyear Tire & Rubber Co.

These Sturdy Truck Rims Are Locked and Unlocked Very Easily

GOODYEAR not only pioneered the straight side tire but also made its use entirely successful by developing the original straight side rim.

Due to the extraordinary stability and simplicity of this rim certain of its characteristic features have been preserved in present day straight side rims.


The full advantages of this primary design, with its lock ring distinct among rims, are retained in the Goodyear Rim now made for trucks.

The oval lock ring combines extreme ease of opera-

tion with utmost rigidity; it is another important result of that earnest endeavor to improve, which protects our good name.

Truck builders therefore have given a very substantial recognition to Goodyear Truck Rims made in all sizes and in both the demountable and detachable types, providing a rim for every need.

Complete information about these easily operated truck rims, now in wide use, can be obtained by writing to The Goodyear Tire & Rubber Company, Akron, Ohio.

GOODYEAR

TRUCK RIMS

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

GENERALITIES OF THE INDUSTRY

Australians Place American-Made Trucks First

The contract for the sale of Dearborn trucks in Australia has been awarded to J. B. Clarkson of Sydney, who recently made his 15th trip around the world for the purpose of obtaining this contract. Mr. Clarkson, one of the biggest importers of automotive equipment in Australia and one of the best informed automobile men in the world, admits the superiority of American-made trucks in the world market.

Mr. Clarkson predicts greater attention to fuel costs in the United States in the near future. The increased cost of fuel in Australia makes economy in this article highly important in that country. He says road conditions in Australia are almost similar to those in the United States. Mr. Clarkson has traveled 1,500,000 miles since he entered the bicycle business in 1903. He is now 49 years of age.

SELDEN TRUCKS IN DEMAND.

The Selden Truck Corp., Rochester, N. Y., has been unable to meet more than half of the demand for its product during the past eight months, according to private reports.

PACKARD SHOWROOMS.

The Packard Motor Car Co. will erect a three-story ornamental building on Bedford avenue, New York city, to be used as showrooms and sales departments.

NEW GOODYEAR RIM PLANT.

The Goodyear Tire & Rubber Co. is building a new rim plant at Akron to employ 500 and turn out 10,000 rims a day.

PATRIOT TRUCK CONCERN HAS \$10,000,000 CAPITAL.

The Patriot Motors Co., Lincoln, Neb., formerly the Hebb Motors Co., is erecting three or more new buildings on its 17½ acre site at Havelock, Neb., and, in addition to the Patriot truck, will manufacture passenger cars. Twelve trucks are being turned out a day now, and before summer is over the daily output is expected to reach 25. The making of passenger cars will not begin until late this year or early in 1921.

This company is capitalized at \$10,000,000, which is \$7,500,000 more than the Hebb Co. capital. Nearly 3000 hands will be employed by the concern before the end of the year. The incorporators are A. G. Hebb, E. C. Hammond, L. A. Winship, K. W. Gillispie and A. H. Armstrong, all of whom were interested in the Hebb Co.

NEW SCHWARTZ PLANT.

The Schwartz Motor Truck Corp., which already has a large plant in Reading, Pa., has purchased a five-acre site for a new factory in the same city. The company has issued \$500,000 in new stock to pay for the plant. It will employ 300 men.

TRUCK FIRM TO BUILD AUTO.

The Bethlehem Motor Truck Corp. will build a passenger car for export only. It will be of the four-passenger sport type, with a Bethlehem motor and Timken axles, and will sell for about \$3000. Production will start soon in the Allentown, Pa., factory.

HANDLING MASTER TRUCKS.

W. C. Garbe, Inc., Portland, Ore., is to erect a new building in which to establish a branch at Seattle, Wash., for the handling of Master trucks.

Argentine Buys Most Trucks From the United States

The United States continued to hold the leading position in the automobile trade of Argentina during 1919, trucks playing an important part. There were 145 trucks valued at \$291,430 sent to that country. Parts exported reached a value of \$3,753,370, over a million above the value of the 2202 passenger cars sent that country. The value of exported tires was \$1,788,147.

The chief competitor of the motor truck is the cheap horse, as many as 20 of which are sometimes used to draw heavy two-wheeled carts that will often carry from four to eight tons of produce. They tear the roads to shreds. The American truck manufacturer should advertise and show where the fast truck is economical against these slow-moving vehicles. Gasoline is expensive, but new oil fields are in process of development.

Traffic conditions in the streets of Buenos Aires are expected to soon force the abolition of the heavy horse-drawn carts in favor of the auto truck. Light trucks are most needed in the city.

If the American truck manufacturer will not wait for good roads, but will get into the field with lively propaganda, service stations and small sales, he will establish the basis of American mechanical standards for parts, tires, attachments, etc., and will assure the market for American trucks. An automobile show in Buenos Aires would help the cause.

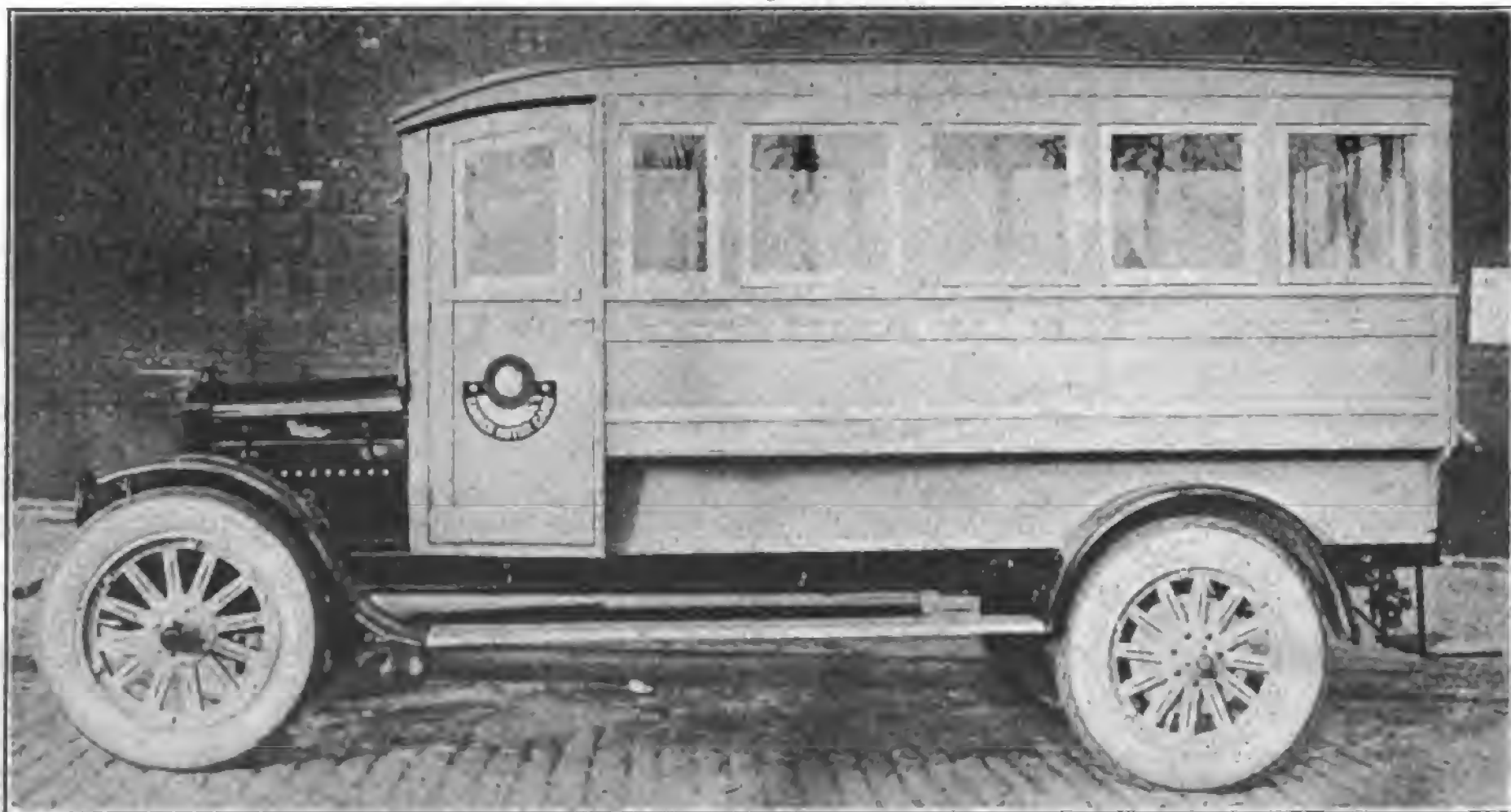
The customs duty on motor trucks entering Argentina is 32 per cent, including surtaxes, on the declared value.

FLEET OF RAINIER TRUCKS SOON ON JERUSALEM STREETS.

The advance shipment of a large fleet of Rainier omnibuses soon to be seen on the streets of Jerusalem were recently sent from New York city, where the headquarters of the Rainier Motor Corp. is located. These Rainier motor trucks are fitted with special omnibus bodies to accommodate 25 passengers. The Ramallah Co., which made the contract, will install a service from Jerusalem to Damascus in Syria. This company, which has offices in Jerusalem and also in New York city, states that there is a strong demand for improved transportation facilities in the ancient city. The English are planning to operate a fleet of trucks in that territory.

NEW PENNSYLVANIA ROADS.

The Pennsylvania State Highway department is planning the construction of 800 miles of durable highways this year. Most of the new mileage is located on what is known as the primary system, or through highway routes.



One of a Fleet of Rainier Trucks Equipped with Special Bodies That Will Be used for Passenger Service in Jerusalem.

RELATING TO FACTORIES AND TRADE

Exposition Building for Milwaukee's Truck Show

The Motor Truck division of the Milwaukee Automotive Dealers' Association has been granted permission by the state department of agriculture to erect a large exposition building at State Fair park, West Allis, Milwaukee county, for motor truck merchandizing trade. The building will be situated near the Motor Hall building and will be of about equal size, 400 by 100 feet. It will be financed, erected and equipped by the Motor Truck division and will be ready by the next state fair, Aug. 30 to Sept. 4. It will cost from \$60,000 to \$75,000.

In the last three years it has been necessary to install a circus tent to care for the truck display, and the truck dealers are naturally elated over the prospect of having a building of their own.

NEW HOOVEN TUBULAR RADIATOR FOR HEAVY DUTY.

The Hooven Radiator Co., which is now in a new plant at 4120 North Western avenue, Chicago, has developed a new tubular radiator designed especially for heavy duty trucks and tractors, which is claimed to be the result of more than two years' work by Hooven engineers. Statement is made that this unit affords the highest degree of radiator efficiency, while it is constructed to have great durability with exceptionally good appearance.

Hooven radiators are now standard equipment for several makes of passenger cars, trucks and tractors. The growth of the company has been very rapid. A year ago the output was 35 radiators, but this has been increased to 1000 a day and the plant capacity is approximately double that number.

TIRE MAKING MACHINE.

The Dickinson Cord Tire Corp., 250 West 54th street, New York City, will be ready about July 1 to deliver a cord tire making machine which is counted on to multiply production of cord tires about six times at lessened cost and without the necessity of additional floor space. Frederick S. Dickinson, who introduced the first pneumatic automobile tire in Chicago, is the designer of the machine and the president of the company.

U. S. TRUCKS IN BRITAIN.

The Great Britain distributors for U. S. trucks, Samuel Wallace & Lum Syndicate, has ordered April, May and June shipments of 200. The United States Motor Truck Co., Cincinnati, recently received a record shipment of nearly 800 wheels from the factory of the Schwarz Wheel Co., Philadelphia.

LUMBER COMPANY MAKES BIG SAVING WITH TRAILERS.

Six Fruehauf trailers take the place of at least an equal number of trucks with the Hine Lumber Co. of Detroit, Mich. As trucks cut the cost of hauling in two when installed the saving in money and time by the use of trailers can hardly be imagined. As haulage expense figures more than 25 per cent of the selling price of lumber, the Hine Lumber Co. has certainly made a 10-strike from an economy standpoint through the installation of trailers.

The company now uses three Fruehauf four-ton semi-trailers and three Fruehauf six-ton semi-trailers. For all six trailers it has but two 3½-ton tractor trucks. Each tractor handles three trailers. One trailer is being loaded, while the second is on the way with the tractor, and the third trailer is being unloaded at the job. Three trailers to each tractor permit continued loading, moving and unloading. A tractor does not lose any time waiting for a load.

Five thousand feet of yellow pine lumber is frequently hauled on each of the four-ton trailers, and 8000 feet of the same kind of lumber on the six-ton trailers. The large load weighs approximately eight tons, which is delivered in one trip when three trips would be required if trucks alone were used.

Each tractor is therefore not only handling three times as much lumber as it would carry without the trailer, but it makes two or three times as many trips.

From 8 to 12 single 3½-ton trucks would be required to haul as much lumber as two trucks and six Fruehauf trailers handle for the Hine Lumber Co. The six trailers do not increase the operating expense of the two tractor trucks more than 20 per cent for fuel. At the same time they require but two drivers where eight or more drivers would be necessary to handle single trucks delivering as much lumber.

NASH TRUCK FACTORY?

The demand for Nash passenger cars is said to mean a separate factory for Nash trucks in the near future.

Goodyear Wins Fight to Restrain Use of "Good Wear"

The Goodyear Tire & Rubber Co. has won its fight to restrain the Good Wear Tire and Tube Co. of Chicago from using a name so similar as to be confusing to the trade, and also to cease alleged unfair methods of competition in the manufacture and sale of reconstructed tires as new products. The Federal Trade Commission on April 15 issued an order upholding all the contentions of the Goodyear Co.

It was set forth in the complaint that Cohn and Counselbaum, owners of the "Good Wear" Co., adopted an advertising style founded on the type of copy used for many years by Goodyear, this action being intended to reap the benefit of world-wide advertising costing Goodyear millions of dollars. The commission's order is sweeping and halts the various practices alleged by Goodyear as an attempt to mislead the public.

NAPOLEON GETS MORE ROOM.

The Napoleon Motors Co. has removed its offices at Traverse City, Mich., from the factory building to the Traverse City State Bank building, thus utilizing every inch of space in the factory for turning out trucks. This company recently presented a \$1000 insurance policy to each employe.

NEW RAINIER PRICES.

The Rainier Motor Corporation has announced an advance in prices on its four chassis to the following figures: Model R-11, ¾ ton, \$1850; model R-9, one ton, \$2050; model R-8, 1½ ton, \$2150; model R-6, two ton, \$2650.

STANDARDS IN COLORADO.

The Houts Motor Co. has been appointed an associate dealer to handle Standard trucks at Delta, Col.



Fruehauf Semi-Trailer Used with a Ford Chassis as a Tractor by the Hine Lumber Co., Detroit, with Large Economy.

PLANT AND SALES ORGANIZATIONS

SKINNER WITH MANTERNACH.

The Manternach Co., the well known advertising agency, has secured the services of Daniel O. Skinner, an authority on automotive advertising, for its Buffalo division. Mr. Skinner has been advertising manager of the International Motor Co., New York city, maker of Mack trucks, for the past six years. He will develop industrial and automotive accounts and supervise the planning and handling of all accounts in the Buffalo territory.

NEW KELLEY SALESMEN.

The Kelley Metals Co. has appointed the following sales representatives: C. C. Germaine, western representative, with headquarters at Chicago; S. C. Bohannon, Indiana representative, with headquarters at Indianapolis; M. E. Simpson in northwest territory, with headquarters at Minneapolis.

ONEIDA N. E. DISTRIBUTOR.

The Oneida Truck Co. has named the Day Baker Co., Inc., of Boston as its distributor for eastern New England. Day Baker, an active member of the corporation, is widely known in New England through his distribution of other electric trucks.

FRANKLIN GETS WELLMAN.

Charles E. Wellman, who has been associated with the Stutz engineering department, has accepted a post as designing draftsman in the motor truck department of the Franklin Automobile Co., Syracuse, N. Y.

PAUL E. RYAN ON NEW JOB.

Paul E. Ryan succeeds J. B. Childe as manager of the Perfection Spring division of the Standard Parts Co. Mr. Ryan has been production manager for the Aluminum Castings Co. of Cleveland.

MILLER VICE PRESIDENT.

S. K. Miller, head of the sales organization of the Kentuck Wagon Manufacturing Co., has been made vice president of the company and will also continue to head the sales department.

NEW KEYSTONE EXECUTIVE.

The Keystone Motor Truck Corp., Oaks, Pa., has appointed Orton C. Beacraft, former general superintendent of the Bethlehem Motors Corp., its production manager.

PAGE IN NEW POST.

The Maxwell-Chalmers plant has appointed B. F. Page, formerly with the FWD Co. and the Oneida Motor Truck Co., as sales manager of its truck division.

ELLIS DIRECTS VULCAN SPRING PRODUCTION.

The Vulcan Spring Co., Richmond, Ind., has engaged A. L. Ellis, who was connected with the spring division of the Detroit Steel Products Co., Detroit, as manager of production. Mr. Ellis' experience with leaf spring manufacture covers a period of about 20 years. The magnitude of the business of the Vulcan company may be judged from the fact that it has upwards of 8000 dealers in the United States and Canada.

WINTHERS IN MISSOURI.

The Winther Motor Truck Co. has been incorporated in St. Louis to distribute Winther trucks in that state and part of Missouri and part of Illinois.

Offices have been established in the Federal Reserve building under the management of E. L. Siemers and W. E. Lauer.

BUTTERFIELD SELLS MOTORS.

The Herschell-Spillman Motors Co., North Tonawanda, N. Y., has appointed C. W. Butterfield as sales manager. He has been connected with the Dyneto Electric Corporation, Syracuse, N. Y.; the Brown-Lipe Chapin Co. and the J. Walter Thompson Advertising Agency.

TO SELL STUDEBAKERS.

R. C. Sackett, advertising manager of the Studebaker Corporation, South Bend, Ind., has resigned and will enter into partnership as a Studebaker dealer in Cincinnati. He had been with the corporation five years.

JUDSON CONTINENTAL CHIEF.

The Continental Motors Corporation, Detroit, has a new president in the person of R. W. Judson, former vice president. Benjamin F. Tobin, former president, is now the chairman of the board of directors.

TO BOOM "NEW WAY" SALES.

F. L. Waite, for seven years advertising manager for the Reo Motor Car Co., has been appointed assistant sales manager in charge of advertising by the "New Way" Motor Co., Lansing, Mich.

DUPLEX POST FOR HARDY.

The Duplex Truck Co. has named H. H. Hardy, manager of the American Railway Express Co. in Lansing, as head of the purchasing department in the high speed limited truck division.

STANDARD'S NEW OFFICIAL.

The Standard Motor Truck Co. has appointed Hamilton Clive, formerly of the eastern district, as central territorial sales manager.

I. B. MEERS ON COAST TO SELL HALL TRUCKS.

I. B. Meers has arrived at San Francisco to take up his new duties as western sales manager for the Lewis-Hall Motor Corp. He will have supervision over the sales of all Hall trucks west of the Rockies. He spent four years on the Pacific Coast as sales manager of the King Motor Car Co. and knows his territory from end to end, including persons and possibilities. During the 12 years that Mr. Meers has been engaged in the automotive industry he has held executive positions with leading truck and automobile companies, and few better qualified men are to be found in the sales promotion field.

TO DISTRIBUTE U. S. TRUCKS.

The United States Motor Truck Co., Cincinnati, O., has named the Millburn Wagon Co., Toledo, O., as its wholesale distributor in Ohio, Michigan and Illinois. The "Millburn" Wagon has been known as a standard product for 75 years throughout that section, and the farmers, as well as the general public, are expected to continue this confidence in the motor vehicle which this company is now distributing.

SUPERIOR CHIEF ENGINEER.

The Superior Motor Truck Co. of Atlanta, Ga., has secured as chief engineer E. F. Paepper, formerly chief engineer for the Republic Motor Truck Co. and the All-American Truck Co.

NEW COLLIER OFFICIAL.

The Collier Motor Truck Co., Bellevue, O., has appointed H. J. Crean, assistant secretary-treasurer of Fisher-Wilkie, Ltd., Sandwich, Ont., as assistant to the president.

NEW SANFORD OFFICIALS.

The Sanford Motor Truck Co., Syracuse, N. Y., has appointed Joseph M. Lake general sales manager and C. F. Doty special representative.

HANDLES LUEDINGHAUS TRUCKS.

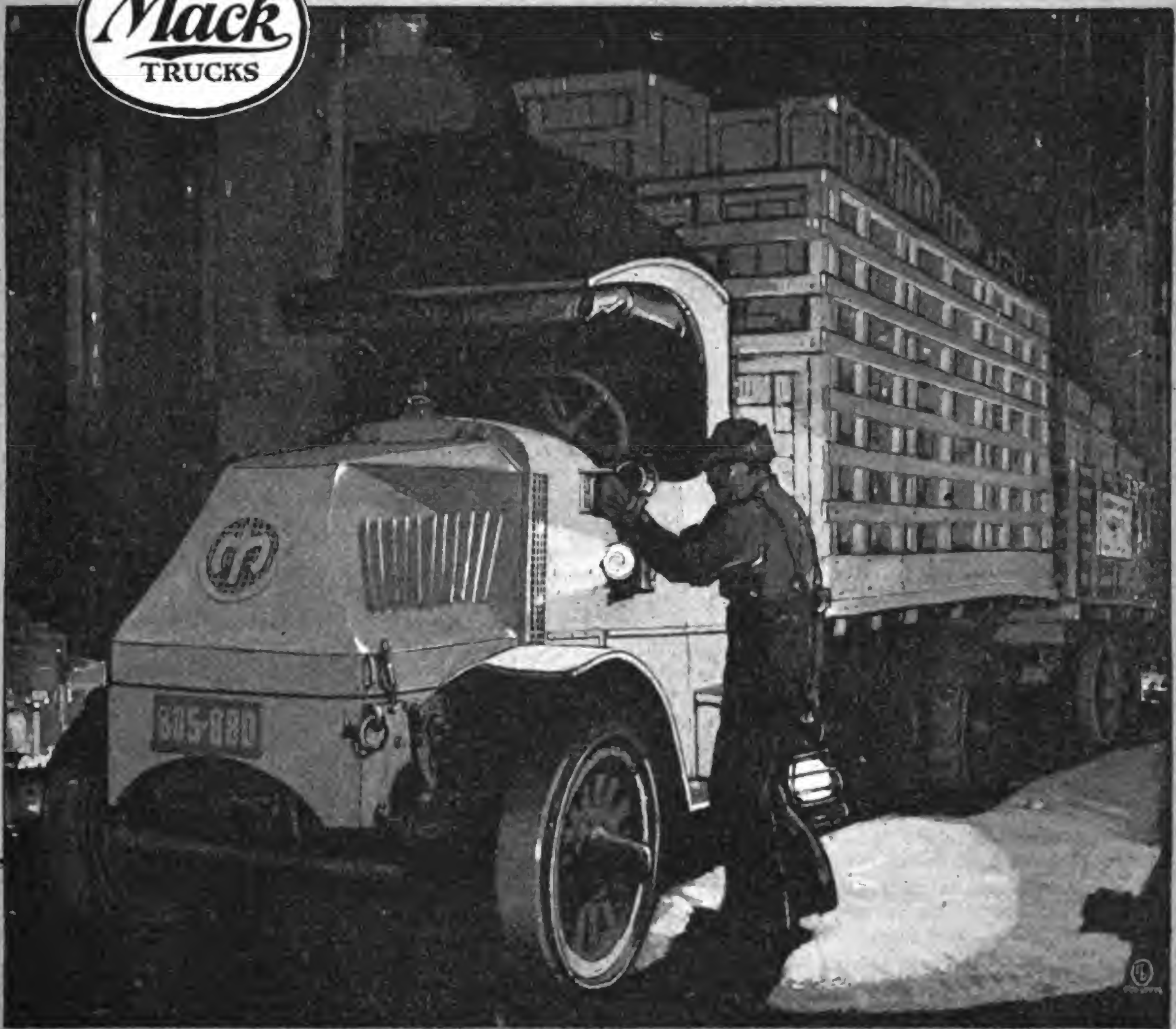
The Southern Motor Co., St. Louis, has been named as distributor of the Luedinghaus motor truck in eastern Missouri and southern Illinois.

JOHN SQUIRES RESIGNS.

The Denby Motor Truck Co., Detroit, announces the resignation of John Squires, assistant general manager and chief engineer.

PIEL RAINIER DIRECTOR.

At a meeting of the directors of the Rainier Motor Corporation, Godfried Piel was elected a member of the board.



Again, "Performance Counts"

".... Reaching Moneta at midnight (after more than 500 record-breaking miles under heavy load) one of the two Mack Trucks hooked onto a trailer and the truck and trailer delivered 17½ tons of tomatoes by next morning to a cannery 25 miles away."—*News Service Bureau, International Motor Co.*

A TYPICAL long-haul Mack performance! Where the going is continuous and the toil hardest—there you will find Mack Trucks pushing their work through on rigid schedules. The Mack is a selected truck—a self-sufficient unit engineered to the very peak of mechanical excellence. Hence the uniformly striking character of Mack performance. *Capacities 1½ tons to 7½ tons.*

INTERNATIONAL MOTOR COMPANY
NEW YORK

"PERFORMANCE COUNTS"

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

TRUCKS SUPPLANTING RAILROADS IN THE SOUTH.

For hauls up to 50 miles motor trucks are rapidly replacing the railroads in Georgia and Tennessee. Seven companies already operate motor truck express routes in the two states. Most of these run over 50-mile routes and take in leading cities as well as smaller towns. They have proven a money saver as well as a time saver for manufacturers, wholesalers and retailers. Not only hours, but days are often saved by means of truck transportation. The mails and parcel post are also outspeeded by the trucks. More good roads, which are on the way, mean more express routes in these states.

METRIC SYSTEM OPPOSED BY AUTOMOTIVE INDUSTRY.

The automotive industry is unanimously opposed to the adoption of congressional legislation providing for the adoption of the metric system of weights and measures in this country. This expression of opinion was secured by the National Automobile Chamber of Commerce. The objections are based on the difficulty of changing dies, factory equipment and mechanism, and the great cost entailed, together with the confusion that would be created among workmen not educated in the system.

AGRICULTURAL DEPARTMENT TO GET MORE ROAD DATA.

The advisory committee of state highway officials, which works with the Department of Agriculture in fixing road building plans and policies, is to be enlarged from six to 12, and will include the entire executive committee of the American Association of State Highway Officials. This action means that the various sections of the country will all be represented and that full knowledge of the needs of each district will be at the disposal of the department.

GENERAL MOTORS PLANT ONE OF WORLD'S GREATEST.

The General Motors truck plant at Pontiac, Mich., is erecting additional buildings to provide 160,000 square feet of new space, making the plant one of the largest in the world. The output for the year ending July 1 will be in the neighborhood of 10,000 trucks.

MONTANA NEEDS OIL TRUCKS.

Trucks adaptable for use in oil fields have been called for in Montana as the result of recent discoveries in the Roundup and Lewiston fields. The demand has been partially answered by a shipment of trucks from Texas.

PHILADELPHIA SEEKS FEES.

Mayor Moore of Philadelphia is urging the legislature to pass an act whereby the city will get a share of the license fees paid by motor truck owners, all of which now goes to the state.

CLARK AXLES IN PICTURES.

One of the most artistic and attractive publications that has gone through the mails this year is a handsomely designed booklet issued by the Clark Equipment Co., Buchanan, Mich. Superbly colored pen etchings drawn at the company's plant by W. M. Young, photographs and drawings, prettily and profusely illustrate the work, which is designed to show everything which enters into the making of a good axle, such as Clark axles for motor trucks are known to be.

The high class of men and materials, and the original and right methods employed in turning out this standard axle are shown. Pictures of the plant, the grounds, the men at work, the mechanism and the other features entering into the making of axles are included. The booklet is an ornament to any library, a storehouse of information for the mechanically inclined and a treat for the art lover. It will be sent on request.

NEW AVAILABLE CATALOGUE.

The typographical architect who designed the latest Available Truck catalogue built as neat a piece of printing as has come off the press in many a day. Many Available trucks and units are shown in attractive decorations, making the illustrations pleasing to the eye and plain to the intellect.

There are pictures of the men who constructed the institution which enjoys such a high rating in the automotive industry today. The first truck, now in service after traveling over 200,000 miles, and the factory in which it was constructed, together with the present magnificent plant, are shown. The story of the phenomenal growth of a decade is told. Pictures and matter tell a tale of progress almost unrivalled in modern industry.

BIG CALL FOR MAXWELLS.

The Maxwell Motor Co. produced 49,746 cars and trucks in the eight months ending March 31, its earnings being \$2,992,000. Demand exceeds production and the fiscal year ending July 1 should reveal the most flourishing period in the history of the company.

PACKARD PLANS FOR 1921.

The Packard Motor Car Co., Detroit, is now making extensions to its factories which will permit a 50 per cent. increase in the output of trucks and passenger cars in 1921. After all tax deductions the net earnings for the last quarter of 1919 were \$2,358,299.

PREFERRED CARS AND TRUCKS.

The Preferred Motor Car Co., with \$2,000,000 capital, will establish in Louisville, Ky., and will build its cars, passenger and truck, on the interchangeable parts system. The company will employ 1000 men and proposes to turn out 3000 cars the first year.

UNITED STATES SENT 15,647 TRUCKS ABROAD IN 1919.

Foreign motor trade is marching steadily forward, as shown by an increase of \$46,000,000 in automobile exports for 1919 over the previous year. The export total was \$194,551,511. Tires are not considered in this figure.

A total of 15,647 motor trucks, valued at \$35,000,000, went abroad, as against 10,308, valued at \$26,574,952 in 1918. Of these trucks 2164 went to Canada, a jump of 568 over the preceding year. England bought only 890 American trucks against 2080 in 1918.

Belgium, Norway, Sweden and Denmark purchased a total of 1807 trucks, nearly 18 times as many as they bought the year before. The Philippines tripled its demand for trucks. South America more than doubled its 1918 purchases, taking 796 against its preceding call for 384.

TO LOAD 100 TRUCKS A NIGHT AT MINNEAPOLIS TERMINAL.

The Rural Motor Truck Terminals, Inc., will soon build a big truck terminal and transfer station in Minneapolis where 100 trucks can be loaded at night for an early start in the morning. This company will soon have 60 trucks in operation, handling 150 tons daily, which is the capacity of five railroad express cars. Its rural lines now reach to Duluth on the north, Little Falls on the west, south to Mankato and Rochester and east to Eau Claire, Chippeawa Falls and New Richmond, Wis. Independent truck lines will also use new transfer station.

24,000 CAR LOAD SHIPMENTS.

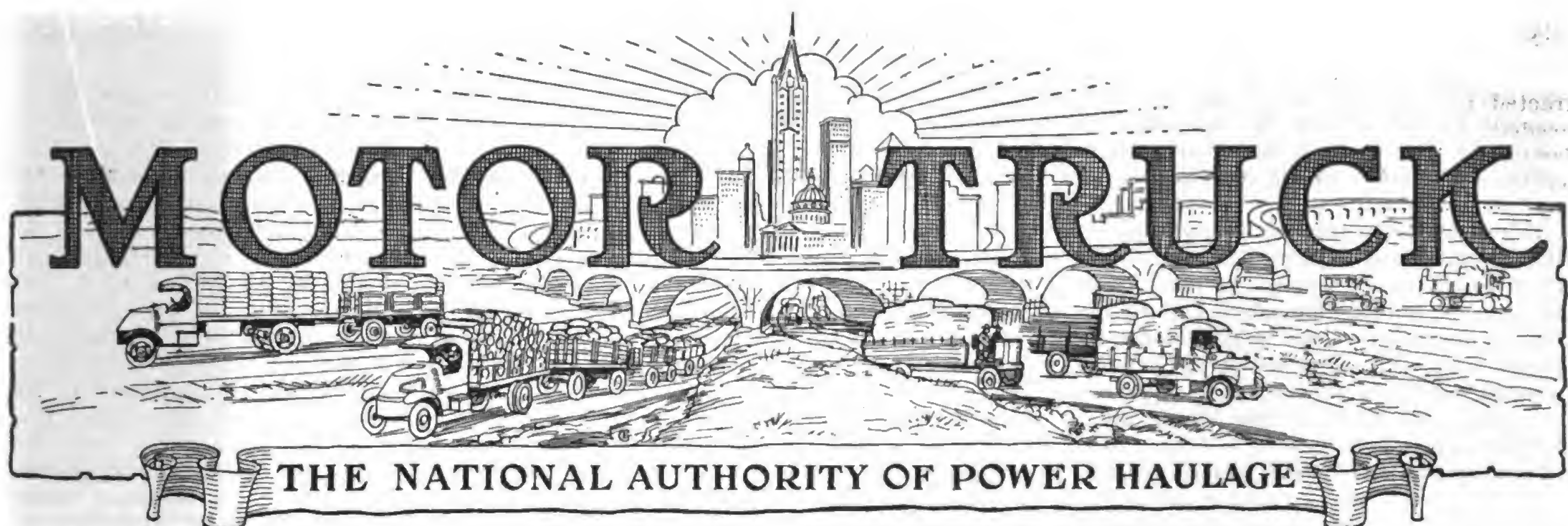
The National Automobile Chamber of Commerce announces that shipments for the month of February will exceed 24,000 car loads, heading any previous record for the month and being nearly 5000 above the shipments in February, 1919. The chamber is now wrestling with the car service section over the question of locating automobile cars and getting them into service.

PHILADELPHIA STREET REPAIRS.

The Philadelphia City Council has inaugurated an efficient plan for the care of streets by which the city will be divided into sections and a special gang of workmen placed in charge of each. Repairs will be made as soon as the work is needed. The Automobile Accessories and Business Association of Philadelphia has heartily indorsed the plan.

FIFTY-CENT GASOLINE IN 1921.

Delegates to the National Petroleum congress at the Congress Hotel, Chicago, this month, voiced the opinion that the car owner may be forced to pay as high as 35 cents for gasoline this year, with a possible jump to 40 and 50 cents in 1921. This forecast calls for concerted protective measures if an oil famine with prohibitive prices is to be avoided.



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PAWTUCKET, R. I.

MAY, 1920.

LONG DISTANCE FREIGHT HAULS WITH TRUCK TRAINS

*Mobilization of Vehicles Always Difficult
—Experienced Trainmasters a Necessity if
Road Conditions Are Unfavorable to Insure
Against Delays from Accident and Obstacle*

HIGHWAY transportation by power truck is engaged in by innumerable interests and because of the fact that very few instances of the emergency trucking undertaken during the "outlaw" strike of railroad employees in April have been given publicity, the best informed men seldom realize the actual economic value to the country of what may be termed "emergency service."

This phrase may be consistently applied to haulage necessitated by railroad embargoes, for as a rule the companies protected themselves so far as possible by notifying shippers that freight could not be accepted. Practically every industry and commercial interest in all sections of the country found the need of shipping, and mail and parcel post were

only available when the units could be made within the weight limitations.

In thousands of instances power truck hauls that may be classified as "long distance" were undertaken, several of them for upwards of 2500 miles, and hundreds of machines were driven from 1500 to 1700 miles. As compared with the cost of shipping freight in volume by railroad the expense was large, but the main object was to maintain operation of plants and shops, and this was successfully accomplished.

A considerable part of the people of the country were continued in useful work and their earnings were not interrupted by the practical use of power vehicles, and there is no question that the wage earners were far greater benefi-

ciaries than is generally realized.

The great difficulty experienced by business interests when there is very urgent need for transportation is mobilizing trucks, for as a rule contracting truck men have demand for more units than they have available, and there is a shortage if there is a material increase of orders, especially those that will require service for indeterminate periods.

The experience of the Goodyear Tire & Rubber Co., which organized the largest number of truck trains sent over the highways by any concern, during April, was especially interesting to analyze. The railroad strike originated in Chicago and did not extend further East than New York City. It did not develop in that city until the company had con-



First Train Dispatched to Akron, O., at Pawtucket, R. I., After a 1575-Mile Drive, in Readiness to Start the Last Stage, to Make Delivery of Capacity Freights at Boston.

tracted for practically all the trucks it needed. In this respect the company was fortunate, for 10 days later trucks were hardly obtainable in the metropolis for any reasonable price.

A number of trucks were mobilized in Boston with considerable difficulty, mainly through the endeavors of truck manufacturers' branch managers and agents, for the majority of the large contracting truck men were so limited by existing service contracts that they were unable to supply machines of the types suited for hauling fabric.

Contractors Have Few Spare Trucks.

To illustrate the condition obtaining, one of the largest contracting trucking concerns in New England, which operates a proximately 120 machines, could not furnish a truck, no matter what the price paid, for to do so would mean breaking existing contracts. For this reason the company refused what would have been a very remunerative proposi-

The various tire manufacturers who undertook to ship loads of valuable fabric over the highways from the New England mills to the factories in Ohio gained extremely valuable experience in a comparatively short time, and this knowledge will be a decided asset in the event that circumstances should again require their resorting to truck haulage in large volume. It can be said that were there a suspension of railroad transportation more or less general, there would be a larger demand for trucks and there might be far greater difficulty in different commercial centers in contracting for sufficient numbers to handle considerable tonnage. Again conditions may fairly parallel those recently experienced.

Organization of Transport Service.

The Goodyear plan of operating a train was well developed and the results were in every way satisfactory. This may be briefly stated to have as many trucks of a single make in a train of 20, with a

were to judge the conditions as they developed and to decide where stops were to be made. All were expected to get their trains through as quickly as possible.

First Train an Operating Experiment.

The first train that was sent over the road to Akron from the Jenckes Spinning Co.'s mill at Pawtucket, R. I., was the only exception to the general policy stated above, and this was in charge of Joseph C. Condon, proprietor of the Pawtucket Trucking Co. This fleet was the first to reach Akron and the first to reach Boston returning, and the crew went through without mishap. The Pawtucket Trucking Co. supplies trucks needed by the Jenckes Spinning Co. whenever the transportation equipment of the latter is inadequate. The night of April 9 the Jenckes company loaded all the fabric that had been produced up to that time into cars and delivered them to the New Haven railroad.

There remained for shipment that



tion, that its own customers might have continuance of service they relied upon.

Very few persons, even those who operate power truck equipment, have conception of the difficulty of organizing trains to move considerable volumes of freight long distances. Ordinarily owners have constant use for all their units. While it is true that if worked locally or within a comparatively small radius they can be used nearly constantly with two or more crews and made far more productive, comparatively few contracts are made for which the machines can be used day and night, so that releasing a part of those ordinarily used days, for instance, for long distance haulage, is not practical because night work is the exception rather than the rule, especially for engagements that can only be carried with groups of machines of varying numbers.

Small Truck Men Often Available.

There are, of course, truck men who have no continuous work and these are generally available for long hauls, but they have equipment that is not always in the best of condition, they have comparatively small resources, and there are few men who have the experience and judgment essential to gather a group of trucks owned by the drivers and hastily organize them into an efficient train crew.



Through City and Battlefield: Upper Left, Crossing New York City; Upper Right, in Traffic in Philadelphia; Below, Passing the Historic Monuments at Gettysburg.

view to simplifying service should this be necessary, and to place a Goodyear man in charge who guided the fleet, directed the drivers, kept the machines together on the road, saw that they were garaged and guarded at night, reserved lodgings for the crew, selected the restaurants for meals, supervised the oiling and greasing of the trucks and the filling of the water, fuel and lubricant tanks. In the event that a decision was required from those directing the movement of the fleets this could be obtained by telephone or telegraph, so that at all times the executives of the company were in practical communication with the pilots and the trucks they were guiding.

The fleet pilots were instructed to make 100 miles a day whenever possible and yet to take no chances. They

week what was produced the night of April 9 and the morning of the following day. As there was no certainty that what had been shipped would be delivered the company had notified the Goodyear company it had best plan to make haulage by truck if there was not a sufficient supply of fabric at Akron to insure continuous production. Deliveries of fabric are made f. o. b. by the mill, but to cooperate with the Goodyear company the Jenckes company undertook to assemble a fleet of trucks from local sources and have these in readiness for departure by the night of April 12.

Many Trucks Needed for Hauls.

The company produces about 150,000 pounds of fabric daily, about half of which is for the Goodyear company, and the remainder of its output goes to the Firestone Tire & Rubber Co., the United States Tire Co., the B. F. Goodrich Rubber Co., the Miller Rubber Co., the Michelin Tire Co. and some other concerns. The mills are operated continuously from Monday mornings until Saturday noons to obtain the stated production.

Anticipating no railroad shipments could be made the week following, Joseph C. Condon of the Pawtucket Trucking Co., was advised of the conditions and needs of the Goodyear company and instructed to have as many trucks in readiness as possible to load



At Times the Roads Were Good: Left, Near the Top of the Allegheny Mountains; Right, a Stretch of Concrete Roadway in the Lincoln Highway Near McConnellsburg, Pa.

the night of April 12 and start the following day. On April 12 the Goodyear emergency transportation expedition arrived in Providence and the plan for making up and operating the truck trains determined. This necessitated changes in the tentative plan originated by the Jenckes company. Instead of sending a caravan of perhaps 40 trucks the number was reduced. Nine trucks were loaded, and these were to be sent with five unloaded trucks to Goodyear, Conn., where the latter were to be freighted and the 14 dispatched.

Six Makes of Trucks in Eight Units.

The 14 trucks left Pawtucket the following morning and were held at Providence the greater part of the day in a heavy storm of rain. One loaded truck was rejected and returned to the factory to be unloaded and the contracts for the five unloaded trucks cancelled, so that the first train as made up consisted of eight trucks, a five-ton and a $3\frac{1}{2}$ -ton Sanford trucks owned by the Dexter Motor Trucking Co.; two $3\frac{1}{2}$ -ton Stewart trucks owned by H. & F. Briere; a $3\frac{1}{2}$ -ton Atterbury owned by C. C. Buckley; a $5\frac{1}{2}$ -ton Mack owned by G. A. Paine; a five-ton Packard owned by F. & J. Testa; a four-ton Parker owned by Alexander McDonald.

One will note that of the eight trucks, five were loaded in excess of capacity, which was contrary to the policy of the Goodyear transportation men, but despite this fact the train went through, due to the good judgment of Mr. Condon, who accompanied it with his car, and he maintains, to the fact that practically all

of the drivers were veterans of the American Expeditionary Force, and had driven trucks abroad, so that no obstacle met with was to them insurmountable.

The train had no emergency outfit for repair, carried few spare parts and depended upon such service as could be obtained along the route. Two of the trucks had one driver each, making the crew of the train 14 in all. Mr. Condon was pilot and he had no knowledge of the highway conditions, nor was he familiar with the route. All other trucks sent out were not loaded in excess of capacity—in some instances not to capacity—and a man who knew the highway guided it. Judged on the basis of experience the trains that left later ought to have made the drive in quicker time, but this was not the fact.

This story is not intended to detail the daily progress of the first train, but to relate some of the events that caused delays, to emphasize conditions that may be met in similar long drives, which may be of value to those who shall in future have occasion to do long distance haulage. Statement should be made that the start was made directly following the unusually severe winter, when the ground was saturated from the melting of the heaviest snows in half a century and by almost continuous rain—two conditions that caused weakening of roadways from expansion of frost and thaws, which could not be repaired until they had dried. The railroad embargoes caused extremely heavy traffic over the roads when they were weakest and in some instances they broke.

The start was made in a downpour of rain and rain fell 18 of the 24 days the train was on the road. As may be assumed the progress was more or less delayed from this condition. The starts were always made early, for no driving was done at night unless absolutely necessary.

A \$25,000 Load on Brook Bank.

The train left Providence about 6 o'clock the evening of April 13 and stopped for the night at River Point, R. I., 10 miles out, and the following day started at 3:30 in the morning, going west through Greene, R. I., to the New London-Worcester highway. At Moosup, Conn., where stop was made for fuel and breakfast, the Packard truck, at a roadside, crushed through a culvert and tottered on the edge of a brook, the \$25,000 load in danger of toppling into the stream. Four hours hard labor was necessary to extricate the machine. This was done by chaining the Packard to another truck on the road side beside it and coupling two trucks with chains ahead of it. This done the four machines were started together and the Packard was hauled clear of danger, the truck beside it preventing sideslip. This expedient was resorted to instead of unloading because there was a sharp angle to the truck deck that precluded handling the rolls of fabric, which weighed nearly a half ton each, and movement on it might have caused the machine to roll or slide.

Branford, Conn., was reached that night and the following day at Stamford, Conn., the transmission gearset of the



Where the Drivers "Watched Their Step:" Left, Making a Sharp Turn at the Bottom of a Long Grade; Right, Climbing a Winding Road in the Alleghenies.

3½-ton Sanford truck was broken by the driver using brakes on a steep hill. The train was held and search made for a truck that could be hired for the trip and to which the load could be transferred, for the Sanford machine could not be repaired until parts were received from the factory or service station. Fortunately a new five-ton Walter truck, then being driven from Newark, N. J., was available and on arrival late that night the load was transferred to it.

Held Up by a Highway Contractor.

April 16 the caravan left Stamford at 5 in the morning and reached New York in the height of traffic. One of the Stewart trucks was lost crossing the city and it was only after a delay of four hours that it was rounded up. This emphasizes the fact that wherever possible large cities should be traversed at night, to avoid traffic delays. That night the train reached Metuchen, N. J., and April 17 it continued on through Philadelphia and reached Ardmore, Pa. The Ardmore boulevard was very rough and much cut by traffic. The following day the caravan reached Columbia, Pa. The princi-

the forward end being considerably lower than the bridge deck. Rain was falling heavily. There was no prospect of the crews extricating the trucks—in fact it was not done for several days and then the drivers paid farmers \$56 each for use of animal teams.

There was no other way to detour the closed highway and the train was held for 28 hours until payment of \$20 a truck, or \$160 in all, to compensate the contractor for "damage to the work" was made. After crossing the closed section the train kept on and reached Stoyestown, Pa., with seven machines, the Atterbury truck being left on the road with a Goodyear "missionary" with a broken fiber magneto gear. The next day the caravan reached Sewickley, Pa., having passed through the heavy traffic of Pittsburgh with some delay, and April 23 a short distance west of Darlington, Pa., came to a stretch of road where in three different places, short distances apart, for distances of perhaps 500 feet, the roadbed had broken and holes were claimed to be four feet deep. Ruts that were the depth of the axle clearance of

Why a Trainmaster Worries.

April 26 the trucks were loaded with freights of fiber soles, heels and other products in cases and started back, reaching Canfield, O., that night. The next day the train found upwards of 500 trucks and cars on the deeply rutted stretch of road near Darlington, Pa., which was then passed by detour, and the drivers had to await their turn to drive through. The ground was so boggy that in a school yard a car was mired until its hood was below the level of the surface and all endeavors to extricate it had been futile. In Pittsburgh the Sanford and Packard trucks became separated from the others, and when they were found the radiator of the Packard machine was in need of repair. This work was done and the two trucks started for Greensburg and Condon drove on to overtake the train.

Near Irwin the Sanford truck came into collision with another machine, which was considerably damaged, and continued on, but the Packard truck could not be driven by the damaged truck. The driver of the Packard truck



The Annoyances and Pleasures of the Train Crews: Left, Held Up While the Mechanic Made a Roadside Repair; Right, Stopped for a Mid-day Lunch.

pal event of the 19th was a delay of three hours by a truck becoming ditched at Cashtown, Pa. The night stop was at Fort Loudon, Pa. April 20 the train reached Saluvia, where a section of the Lincoln Highway 400 feet long was closed to travel by McGray & Co., a contractor of Philadelphia, having begun a repair work. The main road could be reached by making a detour of four miles. The contractor's superintendent refused to let the caravan through.

Mr. Condon explored the detour through what was hardly a cart path, the ground being so soft that a truck with a load of five tons would have settled in places to the body. A mile from the highway was a small brook, swollen by spring rain, over which was a light bridge, perhaps 30 feet long. One end of the bridge deck had broken under a large Mack truck, which was slowly settling with its front wheels on the unbroken part of the deck, high above the rear end. At the other side of the bridge was another Mack truck that had been driven close to the bridge and the roadbed had caved, so that the middle of the chassis rested on the edge of the bank,

trucks and cars extended from either side into the holes.

Ditches prevented passing these holes at the sides and the only thing to do was to get the most powerful truck through and with this tow the others with chains. Passing this place required six hours hard labor. There was then no possibility of detour. That night the train put up at Canfield, O., and the crew was summoned at 3 in the morning by the Goodyear missionary, who urged the men to be the first into Akron. There was more bad road before the destination was reached at 10:30 the morning of the 24th. The Atterbury truck came in the following day at 4 o'clock, the driver having made a permanent magneto repair.

The trucks were unloaded and taken to the Goodyear garage for minor repairs, and the crews had a resting period. During the drive thousands of east bound trucks and fleets of cars were met. Because of the transient demand for accommodation rarely could the trucks be housed in garages and generally they were parked in the street with a police guard.

returned to Irwin and garaged his truck. The garage looked good then, but directly after the machine was inside the floor collapsed and the truck dropped into the cellar. No damage was done the vehicle. When the driver reached Condon at Greensburg by telephone the train master returned with some of the crews and after working all night and until 1 o'clock the following afternoon the Packard truck was drawn out of the garage and started on.

Knowing that the road had been closed at Saluvia, and not wishing to take chances, Condon telephoned and learned that the trucks that had been abandoned at the wrecked bridge had been drawn out, but the bridge had not been replaced and the detour could not be made. To pass the 400-foot closed section of the road a drive that increased the mileage 68 miles was necessary, leaving the Lincoln Highway and going to Uniontown, Pa., where stop was made for the night, and continuing the next day to Cumberland, Md. The morning of the third day the train headed north and reached Chambersburg on the Lincoln Highway that night.

The next day the caravan made Coatesville, Pa. On May 3 at Malvern, Pa., six hours were lost rebuilding the temporary body of the Walter truck, the machine being unloaded and the body disassembled and reconstructed. This work was done by the crews with tools and materials bought in a local hardware store. That night the train remained at Philadelphia. The following day seven perfectly good hours were lost repairing a clutch of one of the Stewart trucks, after which the train made New Brunswick, N. J. The morning of May 5 the order was to keep going until Pawtucket was reached, which was at 6 o'clock the following day, after 36 hours steady driving with stops only for fuel and meals. On May 7 the trucks were driven to Boston, delivered the loads and reached Pawtucket about midnight with a record of 1610 miles for the drive.

Some Items of Expense.

With reference to supplies enroute Mr. Condon found them always obtainable, save at Hopwood, Pa., where only six gallons of fuel a truck could be bought. During the drive the fuel consumption of the trucks averaged five miles to the gallon. The average expense for gasoline, oil, grease, repairs, food and lodgings for the drivers was about \$250 a unit, this applying to eight trucks and 14 men.

Dealing with his experience with the train Mr. Condon, a business man, says that had he not made a penny from the venture it would have been worth his while, for he learned much that every man engaging in highway transportation should know, especially of dealing with road exigencies and handling men and machines. He maintains that the average man who uses power trucks for haulage has little conception of conditions that may eventuate and the economy that can be realized by careful control. For instance, climbing steep grades the trucks were sent up widely separated and one or more machines with good power kept in readiness so that in the event of need a tow could be given. Descending grades the drivers were instructed to drop into low speed and to let the trucks run against the engines, with both sets of brakes in reserve. Care was given to oiling and greasing and the machines were inspected each night to be certain that nothing had developed that might cause failure or accident.

The effectual means of hauling ditched trucks on to the roadways, learning how to pass vehicles on narrow roads, drive through deep ruts, cross unstable bridges, make temporary repairs and get trucks where they could be worked on economically, deal with drivers who are not disciplined and are more or less indifferent, exercise good control and yet keep the men satisfied when they are asked to work hard and for unusually long hours, all conditions to be dealt with by the truck train master, can only be obtained from experience. What equipment should be carried to insure progress with the least practical delay, the tools necessary for roadside repairing, the spare parts and units required or desirable, and the caliber of the drivers must be determined before start is

made, and the service wise truck train master will make careful choice.

Thousands had Small Experience.

What has been stated with reference to one train of trucks may be regarded as typical of the drives made long distances in all parts of the country. Probably the largest number of trains on given thoroughfares traversed the Lincoln Highway and the direct highway west from Albany to Buffalo, because these are the main roads, and the traffic over these was exceedingly heavy. Generally the trucks were driven in either direction carrying capacity freights, but there were very large numbers of cars driven east from the factories, mostly from Cleveland and Detroit.

In different places stretches of poor road were the cause of much delay. The closing of the road at Saluvia, Pa., to which reference has been made, held up traffic in either direction until irate truck owners and drivers aroused the proprietors of hotels and garages and business men generally at Chambersburg to make protest to the Pennsylvania state highway department, which resulted in the contractor keeping the road open while the repair was in progress. There was another section of highway at East Palestine, O., in such condition that at one time more than 200 trucks were held up until repairs could be made. Wherever possible detours were made around bad sections of road, and the length of these varied greatly, but in some instances they were from seven to 10 miles.

Tire Industry Made Heavy Shipments.

Of the large tire companies the United States Tire Co., the Firestone Tire & Rubber Co., the Miller Rubber Co., the B. F. Goodrich Rubber Co., all shipped fabric from the New England and New Jersey mills to their plants at Akron, Detroit and Indianapolis, and from New England to Milltown, N. J., generally using five-ton trucks freighted to capacity and dispatched in varying numbers. As a rule the truck transportation organizations were quickly mobilized and each had the same general conditions to deal with, but the experience of each fleet or group of trucks was probably varied from that of the others.

The truck freights of fabric were valued at about \$25,000 each and were all insured. The contract price for haulage was based either on mileage or for the round trip, each truck being guaranteed a full load returning to a point as near its base for operating as was obtainable. The time for the round trips of from 800 to 1600 miles were dependent upon conditions. Statement is made that the average time for the westward trips of the Goodyear trains from Providence, which was the center of operations, was 102 hours, and the distance approximately 725 miles.

There is no doubt whatever that the haulage of tire fabric was the largest general movement of material ever undertaken by an industry, but one should understand that this was but a small part of the highway freightage during the period the railroads were stagnated by the strikes. With rare exceptions the trucks used were equipped with solid tires, and while not as fast time was

made by these machines as would be possible with pneumatic tire equipment, this was not a handicap.

What has been written of the tire industry can be applied generally to numerous other industries. The experience demonstrates that in the event of need power trucks can be used practically for haulage for any distance, and with resourceful men directing the movement of the trains the cost can be kept to very reasonable figures.

ROLLED OATS FOR HORSES.

Rolled oats were recently fed to truck horses in New York City, one big supply that had been held for export and was in danger of deteriorating being sold for feed at slightly less than the price of feed oats. It was mixed with bran in feeding. This was rather a dainty for horses, an official comparing it with ice cream to a hard worker. Oats and hay have been short in New York City, but a large supply of the latter is now coming in from Canada and northern New York.

RESTAURANT ON TRUCK.

An elaborate enclosed white body on a Republic truck chassis, forms the latest traveling restaurant, which, under the name of the Denever Table Supply Co., is winning a steady trade in the Colorado city. The Republic truck traveling restaurant covers a regular route and many families depend upon it for their meals, a full dinner from soup to dessert, being available. Everything is kept either hot or cold as required.

GETTING THE RIGHT TRUCK.

To put the right truck in the right place is one of the chief aims of a campaign launched by the recently formed Cincinnati Motor Truck Dealers' association. An educational drive will be carried on to improve truck operation and correct overloading and other abuses. Booklets in which the daily operation expense can be jotted down and various publicity pamphlets will be issued.

STATE TO RUN AUTO SCHOOL.

The State Department of Public Instruction has taken over the school at Wilmington, N. C., which has been giving free instruction in the construction, operation and maintenance of trucks and cars.

SYRACUSE, N. Y., TRUCK RUN.

At least 15 trucks are to take part in a truck demonstration tour to be run out of Syracuse, N. Y., at an early date. The Syracuse Dealers' association is in charge.

USED TRUCK SOLD FOR \$1000 OVER ORIGINAL PRICE.

According to President Acason of the Acason Motor Truck Co., Detroit, a five-year-old Acason truck was recently sold for \$1000 more than its original price.

"SHIP BY TRUCK--GOOD ROADS WEEK" GIVES TRUCK'S MESSAGE TO NATION



Part of the Train Making a Three-Day Tour of Eastern Massachusetts Cities at the Suburbs of Worcester, Mass.

THE message of the motor truck as the answer to the nation's short haul problem was spread up and down the country in spectacular form on National Ship by Truck-Good Roads week, May 17-22.

Government officials, including cabinet members and governors, leaders in finance, industry and commerce, national organizations concerned with production and transportation, enlisted in the cause and stood shoulder to shoulder with the trucking industry in bringing before the public the worth of the motor vehicle as the foremost medium in moving the product from the factory and the farm to the consumer in the shortest time and at the least cost, bringing an ultimate cut in the cost of living.

Over 100 big cities, including New York and Chicago and 5000 smaller communities, held demonstrations of the importance of the truck in the upbuilding and advancement of the United States and its people. Governors of 15 states and mayors of hundreds of cities issued proclamations calling upon citizens to

join in the observance of Ship-by-Truck Week. May 16 was designated as Good Roads Sunday and a multitude of clergymen sermonized on the triple relationship between progress, religion and good roads.

The story of the truck was carried into the schools. Thousands of essays were written in competition for two rich prizes, one a four-year college scholarship donated by President Firestone of the Firestone Tire and Rubber Co. and the other a \$1000 scholarship, the gift of the Republic Motor Truck Co..

Every newspaper in the land, in editorial, news and advertising columns, preached the gospel of the truck for weeks in advance. Through 145 special films bringing out the needs of better highways theaters everywhere put the truck in the spotlight. More than 1,000,000 copies of a hand book on national highways told the tale from Gazook, Oklahoma, to Bucksport, Me. Letters from national organizations to hundreds of thousands of members drove home the story of the truck.

Far-Reaching Propaganda.

Few movements of the kind have ever received greater impetus. The plan started on high and ended on high. Every corner of the land had a hand in turning the wheel which steadily revolved and churned up nation wide enthusiasm. The army and navy was in the van, giving its trucks and equipment to the movement. If there was a person in any hamlet anywhere who did not know that the truck was having its inning, battling for 1000 throughout an entire week, he could be naught but a cave dweller. A hermit's lair was the only possible place the propaganda did not penetrate.

The purpose of the National Ship-by-Truck-Good Roads week was to awaken the public to the vital need of a national highway system and to show the motor truck as it is, the power behind the transportation throne, the biggest factor in developing the farm and the factory. This purpose was impressively accomplished.

Big New York Turnout.

In something like 100 of the larger cities great fleets of trucks started out on Monday and chugged from 75 to 100 miles into the country, presenting first hand to all who witnessed their advent the power and ability of the truck in hauling. In many cities parades were held, most of these on a vast scale.

New York city had its parade Monday evening, May 17. About 1000 trucks were in line. These were led by 100 army trucks, followed by 25 from the navy. The army vehicles carried huge searchlights and other trucks were also electrically equipped, making the demonstration spectacular in the highest degree. Fully a million people watched this turnout. Such organizations as the Standard Oil Co. and Borden's Farm Products Co. had trucks in line.

Providence, R. I., had a parade in six sections. Chicago had a mammoth demonstration. Philadelphia, Boston, Newark and other cities conducted tours.

Boston Three-Day Tour.

A caravan of about 35 trucks set out from Boston Tuesday morning on a



Section of One of the Six Divisions of the Rhode Island Truck Demonstration Leaving Providence and About to Tour Pawtucket. This Was a Single Day Event.

three-day tour. There were a number of government trucks, two bands and a bugle and drum corps in line. The event had a military flavor throughout. Educational sessions were held at Lowell and Worcester, addresses on transportation being made by Chairman Cole of the Public Service Commission, Charles N. Gregg of the Goodyear Co., Charles H. Tucker of the International Harvester Co. and others. A banquet was held at Worcester. The trucks carried farm implements and merchandise.

Those entered for this tour included: Kissel, Concord (2), Guaranty (2), Stewart (2), Selden, Ford, Packard, Federal, Traffic, Bethlehem, Nash with Troy Trailer, Oneida, International (2), Paige (2), Sandow, Denby, Reo, Republic, Chevrolet, Oldsmobile, Vim (2), Huffman, Clydesdale (2), Commerce, Master, Acme (2), Autocar (2).

Newark Tour and Parade.

The tour out of Newark, N. J., consumed the entire week. About two score trucks participated. A band and a motion picture outfit made the journey. All the farming districts in the northern part of the state were visited. Prominent speakers talked on trucks, highways and transportation and their relation to the cost of living. The trucks got back to Newark Saturday afternoon and there was a big parade at night, in which 500 other trucks joined. The demonstration

was reviewed by Governor Edwards and state and city officials.

Tours started out from Detroit, Grand Rapids and Lansing through the farming districts of Michigan and at the close of the journeys a mass meeting was held at Lansing.

A tour was taken through the cities and towns of the Connecticut valley around Springfield, Mass., on May 18 and 19, followed by a banquet at Springfield.

Delivered Freight.

Most of Georgia was covered in two truck tours leaving Atlanta. A monster government recruiting truck with a searchlight and a government band of 30 pieces accompanied the tourists. There were brief talks of an educational nature in every community visited. Full loads of freight were delivered to points en route.

In South Carolina a tour lasting five days was run out of Greenville, the party camping one night.

A tour of Indiana was made continuing the entire week, the trucks making their start at Indianapolis. In addition to preaching the lesson of the truck, the highway and transportation, speakers made a plea for the good roads movement.

Twenty-seven cities and towns in Missouri were visited by a caravan of trucks which left St. Louis May 17 and spent the entire week on the road.

Ship-by-truck proclamations were issued by the governors of the following states: California, Montana, Texas, Idaho, Oklahoma, Kansas, Missouri, Kentucky, Illinois, Michigan, West Virginia, Tennessee, Rhode Island, Colorado and Georgia.

Backed by National Bodies.

Among the national organizations that did their part toward the success achieved by Ship-by-Truck-Good Roads Week were:

National Automobile Chamber of Commerce, National Automobile Dealers' Association, Motor Accessory Manufacturers' Association, American Automobile Association, National Association of Motor Truck Sales Managers, Trailer Manufacturers' Association, Chamber of Commerce of the United States, the Manufacturers' Association, Advertising Clubs of the World, the National Grange, the United States Army Recruiting Service and the United States Senate, through Senator Townsend.

The war presented to the American public the value of the motor truck in transportation. The railroad strikes and freight congestion again brought the matter forcibly before the people. The recent meeting of the Chamber of Commerce of the United States furthered the cause. Ship-by-Truck-Good Roads Week was the final clincher.

NEW SHEET MILL WITH \$3,000,000 CAPITAL.

A new sheet mill in Milwaukee, with a capacity of 45,000 to 60,000 tons annually, will result from the formation of the Milwaukee Rolling Mill Co., with a capital stock equivalent to \$3,000,000. It will serve the A. O. Smith Corporation, the Milwaukee Corrugating Co. and other large Milwaukee industries. The main mill building will be 425 by 386 feet and will provide room for 16 lines.

W. W. Irwin, formerly president of the Canton Sheet Steel Co., is slated as president and general manager of the new concern. The incorporators are Fred Vogel, Jr., Walter Kasten and Robert W. Baird, officers of the First Wisconsin National Bank and First Wisconsin Trust Co., leading financial institutions of Wisconsin.

MILLER RUBBER COMPANY JUMPS CAPITAL TO \$60,000,000.

The stockholders of the Miller Rubber Co., Akron, O., have voted to increase the company's capital from \$20,000,000 to \$60,000,000, of which \$20,000,000 is common stock and \$40,000,000 preferred. The sale of \$10,000,000 of new eight per cent. preferred stock, of which over 90 per cent. has been disposed of, was also ratified. Out of the proceeds the first preferred seven per cent. cumulative and the second preferred eight per cent. cumulative outstanding, aggregating \$5,155,500, are to be retired. The company's annual report shows assets of \$12,127,841 on Dec. 31 and liabilities of \$5,852,689.

SINGAPORE TAKES KINDLY TO USE OF MOTOR TRUCKS.

Motor trucks are increasing rapidly at Singapore, India, where they are used to carry plantation rubber and other merchandise from the wharves to stores or from one town to another. The Chamber of Commerce holds weekly rubber auctions and sales of about 1000 tons at each are made subject to delivery in 48 hours. With bullocks carrying a limit load of one ton, at the rate of three miles an hour, and subject to pilfering in transit, the trucks are a necessity. Every rubber firm has at least one and with the business increasing rapidly the need for more is urgent. Trucks are also used extensively to convey metals from the quarries. Over 300 trucks are in operation in British Malaya.

BETTING ON THE F-W-D.

E. R. Greenlaw, representing the Duplex Four-Wheel Drive truck in New Orleans, La., has such unlimited faith in the F-W-D that he recently published an advertisement challenging any other truck up to a five-ton machine for a contest in endurance, speed and economy for \$500 a side.

NEW FEDERAL PRICES.

The Federal Motor Truck Co., Detroit, has increased prices as follows: On the one, 1½ and two-ton models, \$100 each, the new prices being \$2400, \$2600 and \$2900 respectively; on 3½-tonner, \$200, from \$3650 to \$3850; on five-tonner, \$50, from \$4500 to \$4550.

HERCULES MOTOR CO. HAS \$700,000 NEW CAPITAL.

The Hercules Motor Manufacturing Co., Canton, O., has increased its capital from \$800,000 to \$1,500,000, all common stock, in order to increase production to meet demands. The call for the heavy duty type engines built by the company has been overwhelming and new plans, which the additional capital will carry through, is counted on to catch up with the demand. A separate company known as the Motor Castings Co. has been formed to furnish castings for Hercules engines.

The following officers of the Hercules company have been elected: President, J. G. Obermier; vice president, Gordon M. Mather; secretary, Charles Balough; treasurer and general manager, H. H. Timken; directors, Rathburn Fuller, chairman; R. W. Gallagher and Austin Lynch.

TIRE PLANT IN SINGAPORE.

The Firestone Tire & Rubber Co., Akron, O., is erecting a million dollar plant at Singapore, Straits Settlement, in which American machinery is to replace time consuming methods of handling crude rubber. This plant is the only one of its kind owned and operated by a rubber tire company.

CAPITAL STOCK DOUBLED.

The capital stock of the Wichita Falls Motors Co., Wichita Falls, Tex., has been more than doubled, having been recently increased from \$800,000 to \$1,800,000. All of the issue was taken by stockholders.

EMERGENCY USES OF TRUCK FLEETS

New York's Fleet of Trucks is Strike Insurance

Secretary Theodore D. Pratt of the Motor Truck Association of America, New York City, is authority for the statement that New York's vast fleet of motor trucks could break any railroad strike and his deductions are based on the wonderful results achieved during the recent tieup when thousands of tons of commodities, including foodstuffs, were carried in and out of the city by trucks. The association received scores of calls for vehicles to carry goods hundreds of miles and in every case satisfactory deliveries were made.

TRUCKS SAVED HALF COST OF HAULING GRAVEL.

Faced by a teamsters' strike, in which the granting of the demands would mean a big loss on a road construction job at Flushing, Mich., Bacon Brothers installed Duplex Four-Wheel Drive trucks, did the job on time and made a profit. A member of the firm stated that it was found that the gravel could be delivered on the road by truck for just half of what it cost with teams. The concern later took more road contracts and invested \$75,000 in a fleet of Duplex trucks.

ALL ONEIDA SUPPLIES WILL BE SHIPPED BY RAIL.

The Oneida Motor Truck Co., Green Bay, Wis., has established permanent motor truck freight lines following the excellent results achieved by truck service during the railroad tieup. Twenty trucks on Goodyear giant pneumatic tires will be used to ship supplies to the Green Bay factories, the company figuring that the 20 trucks will do away with the necessity of shipping supplies by rail.

TWENTY-FIVE TONS ON FIVE 3½ TON CLYDESDALE TRUCKS.

Five 3½ ton Clydesdale trucks recently carried 109 beams, weighing about 25 tons, from Passaic, N. J., to New Bedford, Mass. The fleet, which is owned by the Interstate Forwarding Co. of Passaic, left the New Jersey city at 7 o'clock Monday morning, May 1, and reached New Bedford Wednesday afternoon at 3. Three of these trucks are over two years old and had undergone practically no repairs.

NO NAPOLEON TIEUP.

Trucks and a chartered steamer kept the Napoleon Motors Co., Traverse City, Mich., in action all during the recent railroad strike. Makers of parts in the Great Lakes section trucked units to the nearest lake port, where the steamer called for them and brought them to Traverse City. Trucks brought materials from other points direct to the factory. Completed trucks were sent out through drive-aways. Trucks were delivered to New York and other points for export.

NO HARM IN DRIVE-AWAYS.

Trucks driven from the Detroit factories to New York City have shown not the slightest sign of wear and it is claimed that the drive-away benefited the prospective purchaser, proving what the truck can do and being an insurance against defective material or faulty assemblage.

LOAD TRUCKS TO LIMIT.

W. L. Kissel, secretary and treasurer of the Kissel Motor Car Co., has issued an appeal to truck owners to see that each vehicle is loaded to rated capacity before being sent out. If all owners would follow this injunction hundreds of thousands of additional tonnage would be utilized annually.

Freight Congestion Is Worst Since 1917 Winter Tie-up

The acute transportation situation in the United States is being carried to Congress, the Interstate Commerce Commission and the Railroad Administration through appeals for relief from the big industrial centers, many large shippers declaring that unless an immediate remedy is forthcoming they must close their plants for lack of coal, raw materials and cars to move the finished product. Decreased production, retardation of industry and a tremendous labor turnover is in sight.

The congestion of freight in the principal railroad terminals is considered the worst since the hard winter of 1917 and business and commerce is being affected everywhere. The recent strike is said to have merely augmented the situation, the railroads lacking equipment and men previous to that incident. It is also declared that the strike is not yet over. Workers not on strike are also quitting the roads and accepting more lucrative employment in industrial plants.

It is reported that 235,000 cars are tied up or delayed in transit. Of these 85,000 are at junctions lacking labor to transfer them. In New England alone 20,000 cars are said to be held up. There is an immediate need for nearly 85,000 cars to take care of the most urgent demands.

TRUCKS RAISE LAND VALUES.

The Burley tobacco district of Kentucky has been cited as one of the hundreds of sections in the country where the advent of the motor truck has inflated land values. Much of the land in that territory had not been planted to tobacco because the farms were so far from the market. Now motor trucks take the product 50 or 60 miles into Lexington and farm acreage has jumped several hundred dollars in value.



Two Selden Trucks Used to Freight Parts from the Makers' Plant at Cleveland, O., and the Selden Factory at Rochester, N. Y., During the Recent Railroad "Outlaw" Strike.

KEPT WHEELS OF INDUSTRY TURNING

New York City Mills Kept Running by Truck Service

While New England is generally credited with suffering most from the present freight congestion, New York City is in such a bad way that only the use of motor trucks has enabled manufacturers to keep from closing their plants because of a shortage of coal and raw materials. Every line of industry is affected.

The congestion at the piers is illustrated by a statement from the traffic manager of one of the big mercantile concerns. He said: "We sent out a truck at 3 a. m. last Thursday to bring goods from a pier. Thursday night the driver reported he was No. 44 in line. The next night he reported that he was No. 22. Saturday he reported that the yards closed early for over Sunday. It was late Monday afternoon before we got the goods."

The steel, iron and machinery industries are facing a suspension of business because of lack of raw materials. A car load which reached the Union Draw Steel Co., May 13, was the first shipment that concern had received since Jan. 4. Officials of the big flour companies assert that there is danger of a flour famine because of the tie-up of flour in transit. The Ward Bread Co. recently received one day's supply, the first shipment in 12 days. Usually there is a month's supply on hand, but only 10 per cent. of the normal amount is now being received. The building programme has been seriously retarded. Many firms have received no shipments since December.

The demand for trucks is so strong that it is hard to get them. One firm put in several days in an attempt to engage a number of trucks for a trip to Chicago and return, without success. James J. Riordan, president of the United States Trucking Corporation, states that 200 trucks of his concern are on the road all the time transporting materials the railroads are unable to forward. Trips to Erie, Penn., and to Boston and other New England points are being made regularly.

One mercantile concern has added 40 trucks to its equipment to bring materials from New England and to make suburban deliveries. E. W. Bliss & Co., one of the country's biggest manufacturers of machinery, is sending trucks to many points in New Jersey and Pennsylvania to get raw materials. Archibald, Lewis & Co., wholesale spice dealers, recently made an emergency shipment to Pittsburgh by automobile trucks at a cost of \$840 per truck load. The Ward Bread Co. is using trucks to get supplies from every possible point near the city.

Edwin J. O'Malley, Commissioner of Public Markets has asked that trucks carrying perishable foodstuffs be given the right of way at freight terminals for

at least two hours before sailing time, or the time that the railroads refuse to accept freight.

MOTOR TRANSPORT CORPS PUTS TRUCKS IN COAST RUN.

The motor caravan run over the Pacific highway from Portland, Ore., to Stockton, Cal., which is preliminary to the May 25 convention of the Pacific Coast Advertising Club's association at Stockton, is attracting wide attention. The announcement that a division of the United States Motor Transport Corps will be entered has added new interest, as has the information that the Goodyear Tire & Rubber Co. will enter one of its famous Akron to Boston trucks. The latter will carry the first load of rubber to the new Goodyear factory at Los Angeles.

Truck Regulations Fixed by States and Cities

Many states have recently passed laws regulating truck weights and otherwise affecting highway transportation. In Pennsylvania the weight, including the load, cannot be in excess of 26,000 pounds. The speed of trucks, whether pneumatic tired or not, is also limited to 20 miles.

The weight limit in Connecticut has been fixed at 10 tons and this has proven a big handicap to manufacturers during the railroad tieup. A 6½-ton truck can only carry the load that, added to the chassis weight, will make the maximum allowed. The city of Detroit is planning to pass an ordinance providing that trucks and their loads must not exceed 800 pounds per inch of tire width and must not exceed eight feet and six inches in width.

Syracuse, N. Y., is licensing and regulating motor freight lines the same as passenger bus lines. The license fee has been fixed at \$25 for each vehicle. Companies must file bonds indemnifying the city against damage.

BATTERIES ON TIME.

The Edison Storage Battery Co., Orange, N. J., is showing confidence in the life of its product by instituting a deferred payment plan through which payments are divided over a period of 20 months.

PNEUMATICS FOR TRUCKS.

The Federal Rubber Co., Cudahy, Wis., has brought out a line of pneumatic tires especially constructed for truck purposes. These tires have been produced after years of research and experiment.

Mill Trucks Deliver 200 Miles Away Twice Weekly

While the freight embargo was on and the worsted business was rushing the Stillwater Worsted Co., Harrisville, R. I., was sending a train of trucks to New York City and back twice a week to put its product in the market.

Two five-ton Pierce-Arrows were used in this work, each carrying six tons, a total of 24 tons a week reaching the Gotham salesrooms of the company. As many as five trucks have been sent in one fleet, the extra equipment being secured in nearby cities. With worsteds out of sight in price there was real value in these cargoes.

A recent lull in the worsted industry caused the concern to turn in one of its Pierce-Arrow machines and the other only makes the New York trip about once a week, going only on call for the New York office.

Three days are allowed for the run. The truck leaves Harrisville at 6 a. m. and reaches Bridgeport, Conn., between 4 and 5 p. m., putting up for the night in that city. The next day New York is reached, the unloading and loading is done and the machine gets back in Bridgeport for the night. The Connecticut city is left the next morning at 6, Harrisville being reached around 5 p. m. Supplies and machinery usually comprise the return load, although, with one truck making the trip the vehicle often comes back empty.

Only Four Trucks Now.

The company's trucking equipment today includes one five-ton Pierce-Arrow, a four-ton Packard, a one-ton Reo and a Tonford. The latter seldom goes outside the yard, but occasionally hauls local freight. The Packard is on the road all the time, hauling freight from Boston, Providence and Woonsocket.

The Reo is used for quick runs to Boston, Providence and Lawrence, Mass. It is also of inestimable service to the people who man the mill machinery, the company basing much of its success on the consideration given those who figure on the weekly pay roll.

During the summer this truck will carry the mill baseball team to various New England points. Theater parties from the plant are taken to Boston and Providence regularly, the only charge being the pay of the driver and the cost of fuel. In many other ways this truck helps carry out the management's belief that those who work in mills are human beings and are entirely worthy of the good things that life has to offer.

EXPORT OF MINERAL OILS.

The export of mineral oils for March amounted to 274,446,484 gallons valued at \$44,255,946, against 144,040,547, valued at \$20,850,911 in the same month of 1919.

TRUCK AND ALLIED MANUFACTURERS

VETERAN TRUCK IN CANADA.

The Eastern Canada Motor Truck Co., Ltd., has its new factory building at Hull, Quebec, in operation, and the first trucks have already been turned out. The company is financed by Canadian capital and is entirely Canadian. It is specializing for this season on a two-ton model called the Veteran truck, although larger sizes can be handled. The company's engineers have had wide experience in the United States and overseas.

The officers are: President, A. K. MacCarthy; vice president and general manager, G. Gordon Bell; secretary-treasurer, T. W. MacDowell; sales manager, J. M. Taylor; directors, T. F. Ahearn, F. E. Bronson, G. S. MacCarthy and Thomas Arnold.

MCCORD COMPANY EXPANDS.

The McCord Manufacturing Co., Inc., Detroit, which now owns and operates the Russel Motor Axle Co., has appointed Henry G. McComb general manager of the latter concern. The new manager is a pioneer in the automobile industry and recently returned from Europe, where he represented prominent eastern truck builders in a study of the practise in truck design, particularly pertaining to axles.

The McCord company added another important automobile part to the variety of its products through the recent purchase of the Racine Manufacturing Co., body maker, of Racine, Wis.

TO MAKE KLEIBERS IN ATLANTA.

Construction work is to begin immediately in Atlanta, Ga., on one of the biggest truck manufacturing plants in the South, which will turn out Kleiber trucks. It will be in operation within a few months. The site comprises 4½ acres at Peters and Park streets, near the White Hickory Truck and Hanson Motor Co.'s factories. The property was bought by Paul Kleiber of San Francisco and his brother, Edward, is superintending the construction.

THE NEW KARAVAN TRUCK.

The Karavan Motors Co. has been formed in Portland, Ore., and is already turning out a heavy duty motor truck under the name of Karavan. The factory and assembling plant is at the Hesse-Martin Iron Works. The Karavan is an assembled truck, but such parts as the frame cross members, aluminum castings for radiator core and hub caps are made in Portland. Units used in the truck include Buda motor, Brown-Lipe transmission and clutch and Sheldon worm drive and axles.

The officers are: President, E. D. Van Dersal; vice president and consulting engineer, Fred Hesse of the Hesse-Martin Iron Works; secretary, Whitney L. Boise; engineer in charge of construction, George H. Peters.

RED ARROW MOTORS CO. SEEKS FACTORY SITE.

The Red Arrow Motors Co., with \$1,000,000 capital, which is to put out the Red Arrow, a four-wheel drive truck, designed by Stoney and Bowman, is without a home, having four sites under consideration for its factory. Lansing, Mich., is a strong factor in the competition.

The company recently held a meeting at Fort Wayne, Ind., and elected the following officers: President, I. L. Stoney; vice president, A. B. Bowman; secretary and treasurer, Louis O'Neil.

BURR PLANT AT HOLYOKE.

The Burr Appliance Co., with capital stock of \$250,000, is to build a modern plant at Holyoke, Mass., immediately for the manufacture of a vacuum carburetor for automobiles. The capital stock is divided into 15,000 shares of common stock at \$10 a share and 1000 shares of preferred stock at \$100 a share. Charles F. Munder of Springfield is president and Charles D. Heywood treasurer. With Russell L. Davenport of Holyoke the two officers comprise the board of directors.

TO MAKE CARRICO GEAR.

The Steering Gear and Parts Co., Detroit, will manufacture the Carrico steering gear, to which it has exclusive rights, in a large plant in the Michigan city.

The officers of the company are: President, H. S. Hall, who is president of the Lewis-Hall Motors Corporation, maker of Hall trucks, and vice president of the Lewis-Hall iron works; vice president, Henry B. Lewis, who is president of the Lewis-Hall Iron Works and vice president of the Lewis-Hall Motors Corporation; secretary, Archibald Carey; directors, F. D. Carrico and the above officers.

GARFORD TRUCK BUYS BROOKLYN BUILDING SITE.

The Garford Motor Truck Co. has bought a property 200 by 170 feet on the south side of the Queensboro bridge plaza, Long Island City, between Crescent and William streets, on which it proposes to erect a 12-story building. A tentative plan comprehends a structure that will cost about \$1,000,000 and which will primarily house the offices, sales rooms, stock rooms and service department. The structure will probably be ready for occupancy in the autumn.

STURDI TRUCK IN PRODUCTION.

The Sturdi Truck Manufacturing Co. of Northampton, Mass., has purchased a building at Williamsett, Mass., which provides a manufacturing area of 4500 square feet. The company also plans the erection of a building shortly that will considerably increase its manufacturing facilities. The equipment of the Northampton plant is being moved to Williamsett and production will soon be under way. A monthly output of 30 trucks is planned.

SUPERIOR TRUCK PLANT.

The Superior Motor Truck Co., manufacturer of Superior trucks, is starting work on a modern plant at Wells street and the Southern Railway, Atlanta, Ga. The new structure will provide 65,000 square feet of floor space, tripling the capacity of its present plant, which has 25,000 square feet of floor space. The latter factory has been sold to K. L. Jones Machinery Co. for \$65,000 by E. M. and E. G. Willingham, owners of the Superior Truck Co.

NEW SHEBOYGAN UNIT.

The Sheboygan Machine Co. at Sheboygan, Wis., of which Alfred Steffen, Jr., is president and general manager, is to have its own gray iron foundry and work has been started on the first unit, 40 by 108 feet, with an hourly capacity of five tons.



Five-Ton Federal Truck and Trailer Equipment Utilised for Snow Removal by the Salt Lake City Municipal Street Department.

PLANS TO PROMOTE TRANSPORTATION

Motor Convoy Off for Los Angeles On June 14

The Motor Transport Corps will send a convoy across the continent from Washington to Los Angeles, starting June 14 and arriving about Sept. 17. The distance is 3600 miles and 44.5 miles will be the daily traveling average. The trip will be over the Bankhead National Highway through Virginia, North Carolina, South Carolina, Alabama, Tennessee, Arkansas, Texas, New Mexico and Arizona.

The journey will be made in order to assist in the development of a system of national highways, to provide extended field service in connection with the training of officers and men in motor transportation and to recruit personnel for the various branches of the army. The first transcontinental motor convoy was run last summer from Washington to San Francisco over the Lincoln Highway.

The convoy will consist of a motor transport unit complete, at war strength, one service park unit, at war strength, detachment from Engineer Corps and detachment from Medical Corps. All motor trucks will be one and one-half tons capacity equipped with pneumatic tires.

MINNESOTA TEACHES DRIVERS.

Schools for automobilists are being conducted in Minneapolis and St. Paul, in charge of traffic specialists. Truck drivers in large numbers are taking the course. With 40,000 automobiles operating on the streets of Minneapolis, Police Superintendent Walker has asked truck drivers to aid in eliminating accidents and congestion. It is claimed that 89 of 90 accidents since Jan. 1 have resulted from traffic law violations. A state law requiring state examination for all motor car drivers is being urged.

BOOKLETS ON HEADLIGHTS.

The motor vehicle department of Connecticut has published a booklet containing the regulations for the use of electric headlights on motor vehicles and instruction tables in their proper care. Copies may be had by application to the Motor Vehicle Department at Hartford. Other states are considering the adoption of a similar system.

BOY SCOUTS ON PNEUMATICS.

In pneumatic tire trucks 80 Akron, O., Boy Scouts will travel over the Lincoln Highway in July to Roosevelt's home at Oyster Bay, N. Y., and on the return trip will visit Niagara Falls. The commissary truck will be equipped with six wheels, the unusual design being developed by engineers of the Goodyear Tire & Rubber Co.

GOODYEAR UNIVERSITY TO HAVE 4700 PUPILS, 117 TEACHERS.

Goodyear Hall, built by the Goodyear Tire & Rubber Co., at Akron, O., at a cost of \$2,500,000, was dedicated on April 17 in the presence of distinguished educators, the principal address being by President W. O. Thompson of Ohio State University. President F. A. Seiberling and other officials of the company spoke.

The hall houses the Goodyear Industrial University, a large auditorium, a modern gymnasium, a cafeteria to feed 8000, 12 bowling alleys, six rifle ranges, dormitory rooms and locker rooms.

The Goodyear Industrial University compares favorably with any of the country's leading institutions of learning. It has a teaching staff of 117, headed by men of collegiate rank. There are 65 class rooms, four large laboratories, assembly and lecture rooms.

Courses range from the elementary grade up to the highest university work. No charge is made to employees and their work is arranged so that all may attend. Already the enrollment is 4700.

TO TRAIN HIGHWAY ENGINEERS IN UNIVERSITIES.

Through the efforts of Roy D. Chapin, president of the Hudson Motor Car Co., in cooperation with the National Automobile Chamber of Commerce and the United States Bureau of Education, a conference was held April 19 at Ann Arbor, Mich., for the purpose of furthering a movement for the training in universities of highway engineers and highway transport engineers. A conference on the same subject is to be held later at Washington. College authorities are impressed with the project and leaders of industry may aid the cause financially.

Truck shipping for short hauls and motorization of the farms to offset the labor shortage will be the lessons pointed out in a demonstration truck tour May 17-22 through Onondaga and six adjoining counties of Central New York under the auspices of the motor truck dealers of Syracuse.

Goodyear Coast Run Is Longest Over Regular Route

The Goodyear Tire & Rubber Co., Akron, O., through George Bellis, manager of its northwest branch, announces that it will establish in the near future three long distance truck runs on the Pacific coast, modeled after its Akron to Boston service. Pneumatic tired trucks will be used.

A regular schedule will be inaugurated as soon as the Los Angeles factory is completed. Company freight will be hauled, but the main purpose of the movement is to show what a pneumatic tired truck can do on long hauls as compared to the railroad.

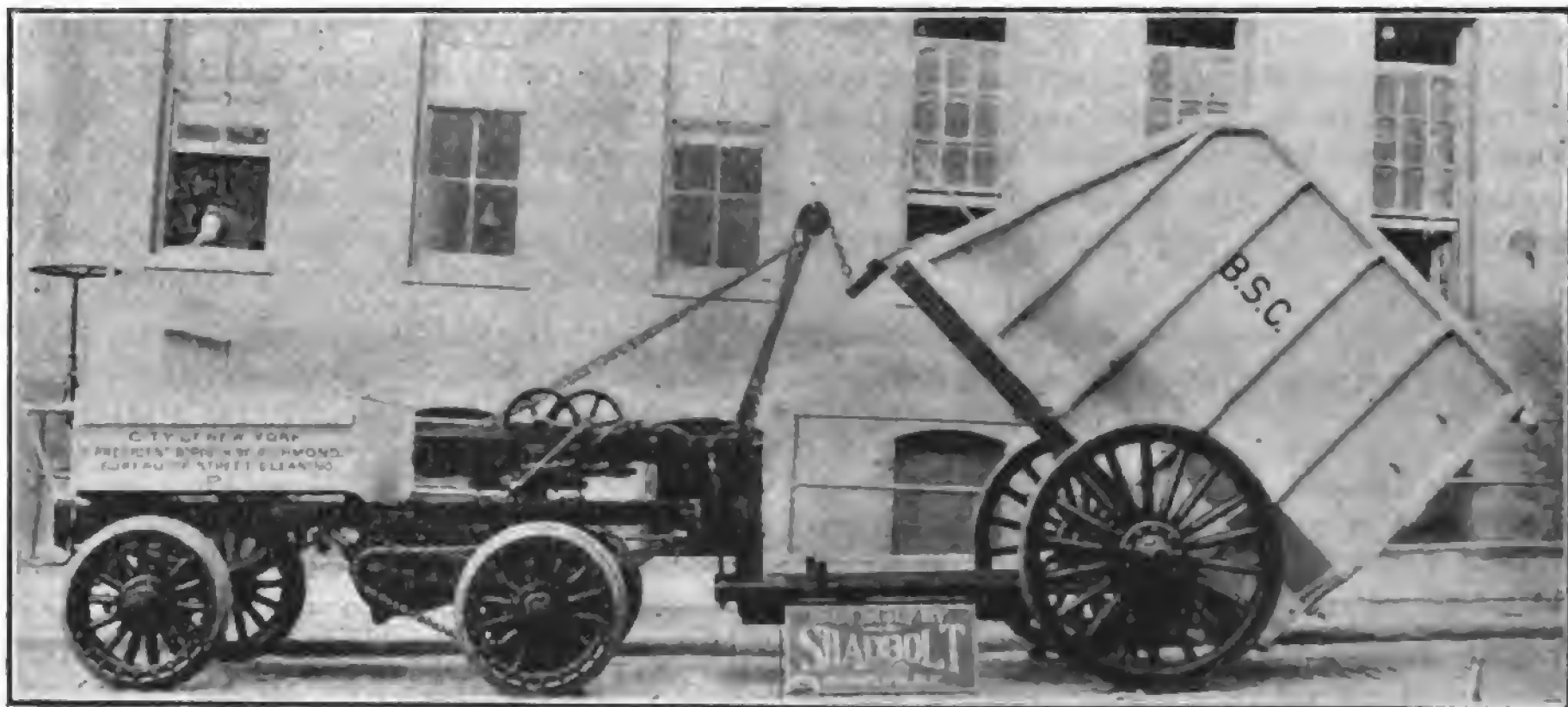
One of the runs will be from Los Angeles to Portland and Seattle, the longest run ever attempted on a regular routing; another will be from Spokane, Wash., to Lewiston, Ida., and the third will be from Los Angeles across the Cascade mountains via the Sunset Highway to Spokane, Wash.

HIGH SCHOOL COURSE TO MAKE TRUCK EXPERTS.

A course in mechanical training for the automobile and truck trade has been inaugurated at the Frankfort high school of Philadelphia and may be extended to other high schools. Two highly trained and experienced instructors have been secured. The Packard Motor Car Co. donated a chassis and many concerns supplied parts. The Motor Truck association of Philadelphia and the Philadelphia Automobile Trade association assisted in the preliminary arrangements.

NO METRIC SYSTEM.

The announcement is made by Representative Vestal, chairman of the House Committee on Coinage, Weights and Measures, that no bill calling for the adoption of the metric system has been presented in Congress or will be considered during the present session.



A Type of Power Hoisting End-Discharging Low-Hung Trailer Body, Used with an Electric Tractor, by the Bureau of Street Cleaning, Borough of Richmond, New York City.

TRUCK SHOWS AND PROMOTION TOURS

\$1000 Essay Prize by Republic Truck Corporation

The Republic Truck Sales Corporation of Alma, Mich., has offered a \$1000 university scholarship for the best original essay prepared by a high school student on "Good Roads" and "Ship by Truck" in connection with National Ship-by-Truck week, May 17-22. It is believed that this contest will stimulate public interest in the subject and shed additional light upon the relationship between the cost transportation and the high cost of living. This is the second scholarship offered, the other being donated by H. S. Firestone of the Firestone Tire Co.

REPUBLICS IN AT FINISH.

Two Republic trucks out of 24 starters alone stuck to the finish in a run through the mud in Alabama in a recent Ship-by-Truck demonstration. The tour was from Birmingham to Tuscaloosa. The results show not only that the Republic truck is a high class article, but that Alabama is sadly in need of decent roads. The tour aroused public sentiment in this latter regard and it is probable that early action will be taken to alleviate conditions.

SYRACUSE UNIVERSITY PUTS IN TRUCK COURSE.

Syracuse University, Syracuse, N. Y., seeks an able man to occupy the chair of transportation in its School of Business Administration. Included among the courses in this department is one on motor truck and highway transportation.

75 ST. LOUIS TRUCKS ON TOUR SHIP- BY-TRUCK WEEK.

St. Louis will observe Ship-by-Truck Good Roads Week May 17-22, officially proclaimed in Missouri by Governor Frederick D. Gardner, by sending a train of 75 trucks on a tour of southeast Missouri and southwest Illinois. Entries will be limited to two-ton capacity trucks because many antiquated bridges will be crossed. The Commercial Car Bureau of the St. Louis Manufacturers and Dealers' association will provide the trucks.

Speakers will be taken on the tour and in addition to telling about the advantages of trucks to farmers and business men and the general benefits of good roads, will also advocate the passage of the Missouri bond issue of \$60,000,000 for highway improvement, which comes up at the November election.

OHIO TRUCK TOUR.

The recent truck tour under the auspices of the Columbus Automobile Trade association, in which 14 machines participated, was an unqualified success. It consumed the entire week of April 19. Two army recruiting trucks, one bearing a powerful searchlight, accompanied the caravan. The trucks used were: Armleder, American, Clydesdale, Ford, Nash, International, Packard, Oldsmobile, Reo, Republic, Sterling and White.

MAY GIVE UP TRUCK TOUR.

Unless there is a stronger response to the invitations extended to members of the Motor Truck Association of Philadelphia to participate in the proposed "Ship-by-Truck" farm tour the third week in May than has been shown to date the proposal will be abandoned.

National Truck Tour Starts at Omaha on June 14

Final arrangements have been completed for the First National Motor Truck Reliability contest to be run out of Omaha in June and the chief details decided upon are:

Start Monday, June 14, 1920.

Entries close Saturday, May 22, midnight.

Cars must be in the promoter's hands at Omaha not later than Saturday, June 5, 1920.

The drivers and observers must be on hand by June 10 to attend a meeting of officials, drivers and observers.

Because of anticipated bad roads in May, due to excessive precipitation and the fact that the Republican national convention is held the week of June 6 and will occupy the attention of press and public, the later date for starting the event was agreed upon. The interest in the event is increasing daily and many unexpected entries are being received. All indications point to remarkable success crowning the efforts of those in charge, including General Manager Charles P. Root and the Omaha Bee, which is sponsoring the event.

TRUCKS IN NORTH DAKOTA.

A series of tours will be made this spring and summer in the territory around Bismarck, N. D., under the auspices of the Goodyear Tire & Rubber Co. to demonstrate the value of pneumatic tire equipped trucks for farm and general hauling. Students of the automotive industry say that \$1,000,000 worth of trucks will be sold in that territory this season.

TRUCK NOTES FROM FOREIGN LANDS

NATION-WIDE TRUCK ROUTE IN ENGLAND AND WALES.

England and Wales have adopted a motor truck transportation system at an estimated cost of \$30,000,000, by which trucks may run 200 miles or more a day through a transfer of drivers. The latter will make a "25-mile hop" and then take another car back over the 25-mile route to the starting point. Trucks will run night and day and will carry freight to any point.

AMERICAN TRUCKS IN ADEN.

Light American trucks have begun to invade Aden on the Suez canal and have scored heavily in popular favor because they do not sink too deeply into the desert sand, although they carry good loads. Most of the trucks in use there are of European make. Motor accessories sold there are almost exclusively American, however.

MARY GARDEN USES TRUCKS.

Mary Garden, the opera singer, is using five motor trucks to carry her wardrobe and other accessories on a brief tour of southern France. Due to the railroad difficulties she will travel by automobile, the truck train bringing up in the rear. If Mary wears the kind of gowns adopted by most of the girls around Paris nowadays the trucks need not be very large. The tour is costing the singer \$2000 a day, which sum is only a by-product of Mary's daily wage.

TRUCK TRANSPORT IN CHINA.

A motor transport service between Changchun and Harbin, and in Kirin, Province, is about to materialize. Five five-ton trucks have been tried out in Mukden. Another line to operate under joint Chinese and American management is likely to be established between Sigmintun and Chengchiatun.

TRUCK PUBLIC SERVICE IN CHINA.

The first public motor truck service in China has been established through the introduction of a fleet of 25 American trucks in Shanghai. Owners of wheelbarrows and string carts objected on the ground that coolies operating those vehicles would be thrown out of employment. The truck men disposed of this argument by showing that 25 trucks displace but 75 of the 3000 string carts and that four coolies are used on each truck.

WIDER TRUCKS IN CANADA.

New motor truck legislation for Canada to be proposed in the Legislature by F. C. Biggs, Minister of Public Works and Highways, extend the allowable width of trucks from 90 to 96 inches and require trucks two tons and over to limit loads to not more than 50 per cent. of their listed capacity outside of cities and towns during April and May, except under special permits.

How the Thayer-Griffith Co., Haulage Contractor, Maintains Its Standardized Equipment for Close and Long Range Work, at Minimum Cost—Its Repair Shop Record.

But when the equipment increases in

Contract haulage is usually hard on machines from the fact that those for whom work is done have no considera-

Repair Shop Job Ticket	Stock-Room Ticket
Job No. _____ 14	Job No. _____ 14
Truck No. _____	Truck No. _____
Owner _____	Owner _____
<p><i>Use this ticket on jobs requiring more than one day's work. Ticket must be properly filled out and attached to truck BEFORE work is started, and turned in to Stock Clerk, with complete record of repairs made, when job is finished.</i></p>	
<p><i>Detach, and turn in to Stock Clerk BEFORE starting job.</i></p>	
Motor	Motor Carburetor Magneto Radiator Water System Bearings Valves Clutch Pedals Gas system Steering gear Tie rods Transmission Short shaft Universal joints Hoist system Supports and shafts Rear End Worm Differential Axles Wheels Springs and bolts Brakes Radius rods Torsion rods Propeller shafts Supports Body Tail Board Hinges Channels Cab Sills
Transmission	
Rear End	
Body	

Repair Shop Job Ticket: Printed with Black on Heavy White Card, Perforated for Separating the Stub. The Ticket Is Attached to the Machine and the Stub Sent to the Stock Room. Size, 8½ by 11 inches.

MATERIAL SUPPLIED

Date_____

Job No._____

Truck No._____

Owner_____

Charge to_____

Use this sheet for all repair work done by our mechanics on trucks operated by THAYER-GRIFFITH CO. Job number on this sheet and job ticket number must agree. Sheets must be sent to State Street Office EACH DAY. Upon completion of job, corrected job ticket should be attached to this sheet, marked "Job Finished," and sent to State Street Office.
THAYER-GRIFFITH COMPANY.

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Requisition Blank for Overhaul and Long Jobs: Printed with Black in Duplicate on Pink and Yellow Paper, Size 8½ by 11 inches.

tion for the trucks. They insist on heavy loads, no matter what the condition of the highways; they rarely regard limitations they would take cognizance of were the vehicles their property. So long as a truck can be moved by its power it is assumed to be serviceable and if work is required the machines are used no matter what the condition.

One of the largest power trucking contractors in New England is the Thayer-Griffith Co., which operates a fleet of 117 trucks, 110 of which are five-ton Pierce-Arrow machines, four of which are two-ton Pierce-Arrows, and three are two-ton Autocars. This concern has standardized its equipment on one make, for the contract work is done with the 114 Pierce-Arrow trucks, the three Autocars being utilized for emergency service. Of the 114 trucks specified, 86 of the five-ton units are equipped with hydraulic power hoists and steel rear end discharging bodies, and the other 28 have stake platform bodies.

The dumping trucks are used for hauling stone, sand, gravel, cement, coal or similar loose material, for construction work and the like, and the platform trucks for transporting lumber, steel or metal construction materials; barrels, boxes, cases, crates, bales or filled sacks. One of the works is the delivery of stock from a Boston warehouse to a chain of grocery stores within a radius of 25 miles, for a very large operator.

Everything is "grist" in the way of business, and no order is rejected when it may be undertaken, but contracts that insure continuous work, some of which is more or less variable, are never neglected. Being one of the best known concerns in Boston engaged in trucking the demands for what may be termed occasional or transient haulage are large and frequently exceed the operating capacity of the concern to handle, in which event trucks are rented.

Unless the trucks are as near 100 per cent. operative as possible the company is penalized in reduction of revenue. The

company has been very successful since its establishment five years ago and its prosperity in large measure is due to the fact that it has kept exceedingly accurate record. This applies equally to maintenance, and this department has been developed with extreme care to insure efficiency of operating equipment and to obtain every practical economy of upkeep. The executive offices of the company are at 148 State street, and the equipment is operated from the Albany street garage in Albany street, which has been used for about three years.

The garage is a two-story concrete structure that was leased by the company when erected, and it uses the entire upper floor and half the lower floor, there being available about 19,000 square feet of floor area, about 7000 of this being the rear of the ground floor. When the lease was made the garage was believed to be ample for the operating requirements of the company for a considerable period, but it has been outgrown and a plan has been made for the erection of a garage on an irregular shaped plot of land surrounded by five

streets, with a frontage on Massachusetts avenue, close to the mammoth service station of the Boston Edison Co.

The garage will be concrete and steel and will be fireproof. The main structure will extend back 200 feet from Massachusetts avenue, with width of 120 feet, and extending at right angle to this along Massachusetts avenue will be an ell or wing that will be approximately 100 by 75 feet. The main building will have 24,000 square feet of floor area and the wing about 7500 square feet, or a total of 31,500.

The main floor will be arranged for the storage of trucks, the capacity being 110, arranged in four rows side by side, with sufficient space between them for machines to be driven in or out, each having its individual bay, and the floor will be constructed so that it will slope sufficiently from the sides of each 60-foot section to the center of the drive to have quick drainage, for the floor will be cleaned by flushing. There will be a wall between the garage and the shop.

The main floor can be entered from either of three streets or from the yard, as there will be an approximately triangular section of the site that will not be built on, but will be fenced. This will afford a considerable area, with two sides 75 and 125 feet length, which will be available for outdoor storage and for work in the event that the shop is congested. This can be built on should there later on be need of enlarging the garage.

The building will be well lighted by numerous windows and ventilated and heated, and there will be such arrangement that no movement of trucks will be necessary to enter or leave the floor with any particular unit. As there will be doors on three sides and to the yard there will be no loss of time for trucks or drivers when leaving mornings, for there can be no congestion. This feature of construction is of considerable importance with the operator of so large a number of trucks.

The shop will be equipped with every facility for repair and maintenance. There will be a spacious stock room for spare construction units and parts. The shop will have all necessary machine tools, including a drill press, miller, shaper, grinder, lathe, a forge and equip-

NAME_____

DATE_____

MOTOR NO._____

TRUCK NO._____

CHARGE_____HRS.

REPAIRS MADE

LABOR CHARGE_____

FORM 3

Repair Shop Job Ticket for Small Work: Printed with Black on Thin White Card, Size 4 by 7 inches.

MAGNETOS & PARTS

STOCK ROOM ORDER

TYPE_____

NO. _____

DATE_____

TOTAL

RECEIVED BY_____

Requisition for Magneton and Parts: Printed with Black on Thin Yellow Card, Size 2½ by 6 Inches.

ment for blacksmithing, a carpenter shop and a paint shop. The arrangement of the shop is to be such that the machines will be convenient to the power tools and workers' benches.

The contract for the garage is to be signed within a few days and it will probably be completed by the end of July. Claim is made that it will be the largest and best service station operated by a single concern engaged in contract trucking in New England.

With upwards of \$600,000 invested in trucks and the business dependent upon them being kept in the best possible condition mechanically, every facility that experience will justify the need of will be provided. The operation of the fleet is in charge of a superintendent with headquarters at the garage, who is assisted by a dispatcher. With these two work a driver foreman and two high grade mechanics who are known as "trouble shooters." In the garage, directed by the superintendent, is a group of 22 workers who do the maintenance and repairing work.

Assuming a day's operation: All orders originate at the main office and are delivered to the garage, where they are recorded by dispatcher, who has before him sheets showing all contract and transient work and the needs for each with reference to trucks and men. All orders to be undertaken immediately are supplied from the vehicles and men available, or as the machines and crews make report.

Each order is entered and so far as possible assignment of the trucks and drivers are made, first for the regular contracts, second for work that can be done by transfer of crews and trucks from one work to another, and as the day progresses the needs are anticipated for the day following. By this plan by the middle of the afternoon the work for the machines and men is planned, and the dispatcher has his organization assigned for doing all for which he has record.

This done the men can be given instruction the night before instead of awaiting for assignment after reporting mornings. The work may be dependent upon weather, and if trucks specifically assigned cannot be used they are diverted to other work or they are kept at the garage and the drivers instructed to clean or adjust them or do whatever may be necessary to condition the ma-

chines. In the event of transient orders they are in readiness to be sent out. The trucks are seldom idle, however.

The dispatcher controls the trucks while out of the garage. The drivers report to him by telephone when instructed to do so and should the orders exceed the number of machines available drivers can be given instructions directly upon completion of work and need not

OIL ROOM

Truck No. Date

Motor Oil	
Steam Cyl. Oil	
Hoist Oil	
Kerosene	
Gasoline	
Cup Grease	

Received by

Form 4

Requisition on Oil Room: Printed with Black on Yellow Paper, Size 3½ by 3½ Inches.

return. Should a truck become unserviceable from any cause the dispatcher is notified. From the report decision is made whether to send another truck to continue the work, to which the load may be transferred if necessary, or one or two of the "trouble shooters" are sent out with one of the Autocars, carrying such spare parts or units as may be

needed. The Autocars carry large kits of hand tools and equipment for doing what might be termed "wrecking." Wherever possible either temporary or permanent repair is made at the roadside.

The "trouble shooter" generally has definite knowledge of the work to be done and whatever is necessary to deal with it. If practical the truck is made serviceable, but if greater time economy is possible by shifting a load, this is done. If the work is to be permanent some delay is justified. If the repair can be best made at the garage the machine is made operative, so it may be driven or towed by the wrecker. In some instances considerable work must be done before a machine can be moved.

The drivers are directly controlled by a chauffeur-foreman, who has headquarters at the garage, but he often makes rounds of work, notes the operation of trucks, observes the drivers, and he has good information of the condition of the machines. Wherever a group of trucks is in service the drivers are directed by a foreman, or perhaps the superintendent of the contractor.

Each driver is responsible for the truck he uses to the extent of making report of its mechanical condition as he observes it, and these reports are passed on by the garage superintendent to the shop superintendent, who makes inspection of the trucks, the attention being in part based on the driver's reports and in part on general knowledge of the machines. These inspections are close and at frequent intervals, for overhauls are made whenever necessary.

The company operates a shop or maintenance department that is directed by a superintendent, under whom is a foreman mechanic, and the shop personnel consists of a total of 22 men, including a blacksmith and helpers, carpenters, painters, tinsmith and machinists. This shop has been worked day and night because of the very limited space and facilities in the garage, but the intention is to have but one shift in the new garage, the men beginning work at 2 o'clock and working to 11 in the evening unless overtime is necessary. This plan is to have the men available to do whatever work will be required after the trucks are garaged to have them in readiness for the day following, unless overhauling is in progress.

PARTS

MOTOR NO. _____

TRUCK NO. _____

DATE _____

STOCK ROOM ORDER

TOTAL

RECEIVED BY_____

Requisition for Parts for Small Work: Printed with Black on Blue Paper, Size 3½ by 6 Inches. The Requisition for Hardware Is Similar, but Is Printed with Black on White Paper.

The stock room has on hand a number of spare units, including engines, clutches, transmission gearsets, main shafts and universal joints, rear and front axles, wheels, radiators, frames, carburetors and magnetos, all assembled, and parts of each assembly, as well as tires and material for whatever construction is economical. The policy is to keep the units in the best of condition and when repair is needed to use these for replacement, so that there shall be minimum loss of service time for any given vehicle. The work necessary for restoration of a unit can be done thoroughly and by skilled workers who use carefully fitted parts.

The units removed from any one chassis are not replaced save when overhaul is made, for with the equipment standardized all assemblies and parts are interchangeable, and replacement in any original chassis would mean duplication of labor that would serve no useful purpose. The units taken out are restored at shop convenience and they are kept ready for use. A truck that might have several days work on it were it repaired by individual servicing can be made ready in a few hours, generally in less than a day or night.

An engine, for instance, can be taken out of a chassis by a repair crew in comparatively short time and replaced by one known to be in good condition. The truck will be ready for use when needed. The shop makes the engine ready for similar replacement, taking whatever time is necessary. Less work is required and better mechanical results are obtained.

When the superintendent determines an overhaul or major repair is necessary a job ticket is made out. In this is entered the number of the machine and the job, and detail instruction with reference to the motor, transmission, rear end and body is specified. On the stub of this ticket is checked the particular detail of each specified group, as will be observed by reference to the fac simile of the ticket. The ticket is attached to the chassis and the stub, which carries the same truck and job numbers, is detached at perforations and sent to the stock room clerk with requisitions for the parts and supplies. A copy of each requisition is kept by the stock clerk and the original is sent to the main office. When the job is completed the corrected job ticket is sent to the stock room clerk and the copy of the requisition is attached and both are sent to the main office, indorsed "Job Finished." This affords a complete record of the instruction, the material supplied and the work done. The time cards of the men specify the labor charged. Error or responsibility can always be traced.

When the repair is of minor character or can be completed in a day another form of job ticket is filled. This specifies the date, the repairs made, the motor and truck numbers, and has space for five separate entries. The charges of hours time and the total value of the labor are distinct items. With such orders two requisitions are filled, the blue for parts and the white for hardware. These show the date, the motor and

truck numbers, and have spaces for 11 entries. In each of these the itemized and total values are filled. These, with the charge for labor, show the two principal items of expense, but of course do not indicate shop maintenance or overhead cost.

The repair order and the requisitions are a complete record of the work. The records of the shop and the stock room are separate during the progress of the work, but must agree and are checked when the records are assembled and sent to the office of the shop and the garage superintendents.

When a magneto or magneto parts are required a "Stock Room Order" for these is issued by the shop foreman and this specifies the date, the number and the type of the magneto, and on the slip 11 entries can be made. This record is necessary for a separate accounting of the magneto department is kept.

When supplies are drawn from the oil room the requisition shows the date and the quantity and value of motor oil, steam cylinder oil, hoist oil, kerosene, gasoline and cup grease, and there is space for five additional entries.

The mechanic to whom material requisitioned is supplied must sign for each issue, and this establishes responsibility and accounts for all stock released from the stock or oil room.

This covers the general system in the shop for accounting for units, parts and material used for any repair work, but body building and painting are not included in it. Separate orders are issued for such work and the foreman carpenter and the foreman of the paint shop have charge of the stock and the tools and are each held responsible for the work. There is small probability of shortage or leak in either of these departments. While materials cost considerable they do not by any means equal the charges for labor. The repair work by each of these departments is included in the record for stock and labor, however, which is shown on overhaul, for instance.

All the greasing, oiling and cleaning and tank replenishments is done after the trucks are brought to the garage for the night, and this work is done systematically so that there shall be no neglect or oversight.

The trucks are not inspected periodically, for this would possibly result in neglect of conditions that should receive immediate attention, but whenever reports are made by drivers examinations of the machines follow that insure whatever attention may at that time be necessary.

When contracts are made that necessitate the use of trucks too far from the Boston garage to depend upon the regular organization and its facilities they must be equally well serviced. First of all the drivers are carefully chosen and one of them is paid to oil and grease the machines regularly. If there is a good repair shop in the vicinity the company generally contracts for service, the work to be authorized by the foreman in charge, who is responsible for the maintenance.

The foreman is required to inspect the

trucks at brief intervals, as well as examine them following reports by the drivers. If the contract for service is made with a station that specializes work on the particular make of truck the company uses, spares and parts can be obtained from it, but if there is no Pierce-Arrow station whatever experience would dictate is required is sent to the garage where it is issued by the foreman. If the number of trucks is considerable a man may be sent from the Boston garage who supervises the machines and maintains them mechanically, he being directly responsible for the work and the use of materials.

In the former instance a box of spare parts is packed and inventory made of it, and when the work is completed the record must account for whatever the inventory shows has been used. In the latter instance the mechanic carries his own tools and such supplies and material as may be required, and requisitions the garage stock room for whatever is needed to maintain the stock in the box. At times the company will build or rent a shop and send tools and parts and even units, with mechanics who keep the machines operative.

When the company was engaged with a large contract in connection with the construction of the Victory ship building plant at Squantum, Mass., although but a few miles from Boston, a complete shop was equipped and a force of men detailed for maintenance, who were transported to and from the garage twice a day, there being men on duty constantly, as the machines were worked 22 hours a day.

The company now has 19 trucks at Danvers, Va., where the Aberthaw Construction Co. is engaged in construction work that will continue through the year in all probability. The Thayer-Griffith Co. found a Pierce-Arrow service station convenient and a contract was made that requires work to a specified standard whenever necessary. The company's trucks are in charge of a mechanic who directs the work upon them and he is responsible for their condition, being authorized to order any repair and to his own judgment. There the machines are oiled and greased by a man who is paid additional to do this work.

The record of all work done away from the garage is carefully accounted for by shop records and requisitions and inventories, so that the actual cost of maintenance of each unit can be clearly established.

PIERCE-ARROW COMPANY NOT TO BE ABSORBED.

The Pierce-Arrow Motor Car Co. apparently has no intention of allowing itself to be absorbed by the General Motors Corporation. At the annual meeting in Buffalo, N. Y., the old directors were re-elected, the vacancy caused by the death of Charles H. McCulloch, president of the Lackawanna Steel Co., not being filled. Asked as to the absorption rumor the chairman of the meeting replied: "Our answer is that we elected the old board of directors."

TEN TRUCKS OR 54 HORSES--WHICH?



A Five-Ton White Truck of the Lefrancois Transfer and Teaming Co., Woonsocket, R. I., with Typical Load of Furniture.

TEN trucks equal 54 horses. That is what Joseph O. Lefrancois of the Lefrancois Transfer & Teaming Co., Woonsocket, R. I., thought offhand, although he later declared that his guess may be wrong and that, because of the different classes of work in which the two are engaged, he could not compare results of two methods of transportation.

The Lefrancois Transfer & Teaming Co., by the way, is one of 10 concerns seen in a row by a MOTOR TRUCK representative, which does not make any attempt to keep any cost-per-mile figures. This vital phase of the trucking operation is overlooked by wholesale in New England, a section which loudly boasts of its business efficiency.

Mr. Lefrancois is naturally a friend of the horse because it was not so many years ago that he earned his livelihood with an express wagon and one horse. This equine gave him the start in trucking, at

which he has scored a phenomenal success. The Lefrancois Transfer & Teaming Co. grew from the one horse and wagon and later absorbed the Woonsocket Teaming Co., using two large buildings today to house the 10 trucks and 54 horses which are kept busy daily, carrying a big part of the transportation burden in northern Rhode Island and southern Massachusetts.

Yet, while Mr. Lefrancois refuses to go back on his equine friends when he

needs to further enlarge his business, as is the case at present, he does not buy new horses. Nothing like it. He must get more pulling power, and before the month is over will have closed contracts for two five-ton trucks.

Neither did the Rhode Island transportation man stick to horses in defiance of the march of progress. He was the first owner of a commercial vehicle in Woonsocket, a Pope-Hartford, which he had so long ago that he has forgotten the date. His experiment was not much of a success, for a repair job that can be turned out in 15 minutes today was a vast undertaking in those days. Instances were not uncommon where the mechanics would take the engine out and then lose the combination, being unable to get it back again.

The Lefrancois Transfer & Teaming Co. has contracts with 20 mills in and around Woonsocket. The company does any kind of work called on by these factories at a moment's notice. The order may be to haul material around the plant yard, to or from the freight house, or to New York. It's all the same to the trucking company which instantly tackles the job.

The Lefrancois trucks, in carrying out its hauling contracts with the various mills, run regularly to New York, Bridgeport, Conn., Dedham, Mass., Providence, Pawtucket and Westerly, R. I. The horses are used for tipcart work, hauling machinery on lowgears and carrying local freight.

The company pays all its drivers a bonus of five per cent. each week for a full week's work. The bonus goes only to drivers who put in six days, being therefore a premium for the men to be on the job all the time.

The trucks now in service for the Lefrancois Transfer & Teaming Co. are: Three Atterburys, 2, 2½ and 3½ tons; two five-ton White's, a 2½ and a 3½-ton Packard, two International 1½ tonners and a 1½ ton Republic.



Three of the Fleet of Trucks Operated by the Lefrancois Transfer and Teaming Co., Woonsocket, R. I. The One in the Upper Picture Is a Packard and Both of Those Shown Below Are Internationals.

REVISED TRACTOR DEMONSTUATION AND SHOW RULES FOR 1920

DEMONSTRATIONS of tractors and field implements during the present year must be made under the rules determined for the governing of such events, which have been issued by the National Tractor Demonstration and Show Committee of the National Implement & Vehicle Association, which is composed of Finley P. Mount, chairman; E. J. Gittins, J. B. Bartholomew, H. B. Dinneen, C. S. Brantingham, Dent Parrett, Howard Seely, H. M. Wallis, Frank Sillo-way and Harry H. Bates.

The copies of the rules distributed are prefaced by a statement by the committee with reference to its position, which follows:

The National Tractor Demonstration and Show Committee having been charged with the duties of exercising jurisdiction over all exhibitions of steam and gas tractors, threshers and such other tractor driven or drawn machinery as the committee may agree upon, including all winter or indoor exhibitions, now submits to the members of the national association and the interested public the following rules established by the committee as best meeting for the present the duties the committee believes it is expected to discharge.

The committee asks and no doubt it will receive from all the members of the association the fullest cooperation to the end that the work may proceed smoothly and the industry receive permanent benefits therefrom.

The 15 original rules are supplemented by seven additional rules which more clearly define the policy and principles first laid down with reference to the demonstrations and shows, which are to be read in connection with them, and what is regarded as a show or demonstration is specifically established.

1. A demonstration is a public field exhibition of tractors participated in by two or more manufacturers, distributors or dealers.

2. A show is a public exhibition of power farming machinery made by two or more manufacturers, distributors or dealers.

3. The committee will take no cognizance of any tractor show or demonstration which is purely local in character, and of not more than one day's duration.

4. The committee will take cognizance of all other tractor shows or demonstrations and will either approve or disapprove the same.

5. The committee will during the year 1920 make the necessary arrangements for one or more national tractor shows to be held before March 1, 1921, and to be managed and controlled by the committee.

6. All members of the Tractor and Thresher Department of the National Implement and Vehicle association, who are in good standing at the time, shall be eligible as exhibitors at such national tractor shows, excepting such members as

shall have exhibited at or participated in a tractor show or demonstration, which has not been formally approved by the committee, or such as have violated the rules of the committee herein or hereafter adopted by the committee and published to the members. Any member who shall participate in or exhibit at any tractor demonstration or tractor show not approved by the committee, or who shall violate any of the published rules of the committee, shall be barred from exhibiting at any national show or shows controlled, managed or put on by the committee.

7. The committee reserves the right to pass upon the application of any manufacturer, who is not a member of the National Implement and Vehicle association, and to admit or exclude such manufacturer from exhibiting at any national show, and if admitted will be admitted upon terms and conditions established by the committee for the admission of non-members.

8. Any manufacturer who is not a member of the national association and who shall exhibit at or participate in any tractor show or demonstration, which shall not have been approved by the committee, shall be in all cases barred from exhibiting at any national show or shows controlled, managed or put on by the committee.

9. The committee will hold regular meetings on the second Wednesday of every other month, beginning March, 1920, in the city of Chicago, at a place to be determined by the chairman, at which meetings all applications for tractor shows or tractor demonstrations will be considered.

10. All applications for approval of proposed tractor shows or demonstrations must be mailed to the chairman of the committee, Finley P. Mount, Tower building, Chicago, or to the National Implement and Vehicle association, Chicago, Ill., and such applications will be considered by the committee at the next regular or special meeting thereof.

11. The secretary of the committee will keep a record of all violations of the rules of the committee, which come to his attention, and each member is requested to furnish the secretary with whatever information he may have with reference to such violations.

12. In determining whether a member has violated the rules of the committee by participating in an unapproved show or demonstration, the committee will regard participation by branch house organizations of any member as having the same effect as participation by its member. The committee regards distributors in the same position as a branch house and that members can require their distributors to abide by the rules of the committee with reference to participation in tractor shows. However, the committee reserves the right to consider and judge on its merits each case of a distributor participating in an un-

authorized exhibition.

13. The committee will take no cognizance of exhibitions at state, county or local fairs, providing no plowing or other field work is performed.

14. No show will be approved or put on by the committee in any city until adequate hotel and exhibit accommodations have been arranged for and provided at reasonable prices for both.

15. The committee will in due time announce and publish rules and regulations for the government and control of its national show or shows.

16. No demonstrations held by agricultural colleges or others will be approved excepting those permitted under rule three.

17. The committee will not approve any shows of tractors or tractor drawn or driven machinery held in connection with or under the auspices of retail dealers' associations or threshermen's associations.

18. Any dealer handling or acting as agent for more than one make of tractor and desiring to hold a demonstration or school confined to the makes of tractors he handles shall not be deemed a violator of the rules of this committee nor shall the manufacturer furnishing tractors to said dealer be considered as a violator of the rules, even though he may furnish expert help for the demonstration or school, the same being purely for the purpose of seeing that his machines are properly demonstrated.

19. The term "purely local in character" used in rule three applies to demonstrations which draw or are intended to draw their attendance from the county in which the demonstration is held or the equivalent in area, but not to exceed the territory actually tributary in the retail trade to the place where the demonstration is held.

20. A demonstration of tractors or tractor drawn or driven machinery in road making is construed by the committee as being the same thing as a public field exhibition, as mentioned in rule one, and a combination of plowing demonstration and road making demonstration or other uses of tractor power on different days of the same week and under the same management is deemed by the committee to be a demonstration of more than one day and comes under rule four.

21. Rule three is amended to read as follows:

"Rule three—The committee will take no cognizance of any tractor demonstration which is purely local in character, and of not more than one day's duration."

22. The committee will take no cognizance of any show which is purely local in character as defined by the rules, and in which the exhibitors are limited to bona fide dealers resident in the territory tributary to the town where such show is held.

RURAL EXPRESS AND BUS LINES

MOTOR TRANSPORT TERMINAL STATION FOR TOLEDO.

The Hi-Ways Freight Terminal Co., with a capital of \$10,000, an adjunct to the Hi-Ways Transport Association, Inc., has been formed in Toledo, O., for the purpose of owning and operating a motor transport terminal station for inter-city traffic. The building will be two stories high, with basement, and will have 10,000 square feet of floor space. It will have electric elevators and other modern conveniences. All the larger cities of central and northern Ohio have now taken up the inter-city transport idea, which is scoring an emphatic success. The Toledo association has 40 truck and warehouse men in its membership.

WHITE SIGHT-SEEING BUSES.

The T. & S. Tours Co., Chicago, Ill., has just received a fleet of sight seeing buses built by the White Co. of Cleveland, which are modern, comfortable and stylish. They are pneumatic tired. There are two sizes, carrying 12 and 22 passengers. One of the rides is 39 miles long and requires 2½ hours. Chicago now claims to lead the country in sight seeing bus services.

STANDARD DRIVE-AWAYS.

Because buyers could not wait for railroad transportation completed trucks have been driven away from the Standard factory at Detroit in the past few weeks to New York, Gettysburg and Pittsburgh, Pa., Indianapolis, Ind., Oregon, Ill., and other points.

AKRON-CLEVELAND BUSES.

Bus lines between Akron and Cleveland are being inaugurated this month by the Fay Transportation Co., Chicago. The company intends to use 72, each capable of carrying baggage, in addition to 14 passengers. They will be operated on a 15-minute schedule.

PONTIAC TRUCK MEN UNITE.

The Pontiac, Mich., Transportation association has been organized with 33 truck and draymen as members. The organization will have a permanent headquarters and will aim to improve truck conditions.

New York State to Fight H. C. of L. with Trucks

New York state is planning a \$10,000 appropriation to allow the highways transport committee to promote increased motor truck facilities as a means toward lowering the cost of living. It is planned to establish rural express routes where no transportation facilities exist. The programme calls for a field agent at Albany to aid the movement.

MOTOR TRANSPORT SYSTEM FOR INDIANAPOLIS.

Following the achievement of motor trucks in moving 100 tons of freight in and out of Indianapolis daily during the railroad tie up, it is probable that an association will be formed in that city to take over the management and operation of a permanent highway motor transport system.

The following rates have been agreed upon: Ten miles or less, three cents a mile a 100 pounds; 10 to 15 miles, 2½ cents; 15 to 25 miles, two cents; 50 miles or more, 1½ cents.

CINCINNATI PREPARES A NEW TRAFFIC ORDINANCE.

Cincinnati is preparing an ordinance that will regulate heavy vehicular traffic, establish one-way streets and solve the automobile problem in its every phase. A committee comprising councilmen, traction men, engineers and business men, recently visited the leading cities of the country and studied the problem from every standpoint. It is expected that their united efforts will result in traffic laws that will be a model for the entire nation.

TWENTY NEW YORK BUS LINES.

Twenty bus lines are already in operation in New York city and applications have been received from civic organizations in various municipal centers for 30 more. A bill is now before the legislature authorizing the city to establish and operate bus lines wherever there is need for them.

KENTUCKY RURAL EXPRESS.

The Union Transportation Line, Louisville, Ky., with a capital of \$100,000, has in operation five main highway transport routes out of seven main and 477 secondary routes, covering 136 towns, which it plans to establish. All of these towns are within a radius of 75 miles from Louisville. Twenty trucks are now in service. Trucks, which leave the Louisville depot twice daily, carry to the small inland towns all the merchandise made, distributed or sold in Louisville, and bring back live stock, grain, green groceries and all other farm products. The company gives a door-to-door service.

PUBLIC BUS SERVICE IN AKRON BY GOODYEAR CO.

The Goodyear Tire & Rubber Co., with the indorsement of city officials, will begin the operation of a 10-car motor bus service in Akron, O., June 1. The company has been operating a bus service to accommodate the 3000 families living in its housing section with excellent results. Each of the new buses will carry 24 people. They will be enclosed, well ventilated and heated in winter. Akron's population has jumped to over 200,000.

LICENSE DELIVERY TRUCKS.

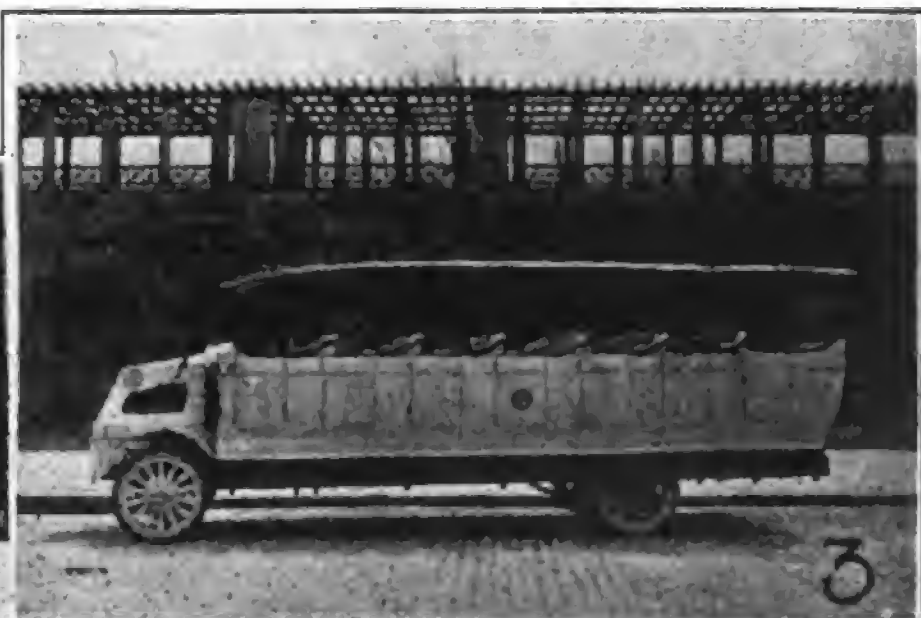
The city of Redlands, Cal., has decided to charge a flat license of \$25 for every truck making deliveries there, whether owned in the city or not. Trucks for hire are no longer allowed to stand in the streets while their owners solicit business.

TRUCK LINE FROM CHICAGO.

The Arrow Motor Line Co. has been organized to operate a motor truck line between Chicago and Libertyville, Ill. It will afford a daily service, carrying passengers, freight and express.

TRUCKS ON YELLOWSTONE TRAIL.

The Yellowstone Trail Association at its recent annual meeting in Milwaukee decided to conduct a truck tour over the entire length of the trail, from Cleveland, O., to Seattle, Wash., it being anticipated that provision will be made meanwhile for the building of a bridge across the Missouri river at Moberge, Mont.



Some of the Latest Types of Passenger Buses: 1, Two-Deck Bus Now in Service at Chicago; 2, Standard Single-Deck Enclosed Bus Body; 3, Open Bus with Folding Top and Side Door Body on a Mack Chassis.

BOSTON TO CHICAGO AN EIGHT-DAY JOY RIDE BY MOTOR TRUCK IN 1921



The Five-Ton White Truck Loaded with Seven Tons of Dyed Yarn at Woonsocket, R. I., Starting for Delavan, Wis., from Attleboro, Mass.

BAD roads through Indiana, including a closed section of the Lincoln Highway, threw constant hurdles in the path of the five-ton White truck owned by the Globe Coal Co., Woonsocket, R. I., which set out April 20, with 14,000 pounds of dyed yarn from the plant of R. Wolfenden & Sons, Attleboro, Mass., for the plant of the Bradley Knitting Co., Delavan, Wis., one of the longest, if not the longest haul ever accomplished in the history of highway transportation.

The distressing part of the story is that old Dobbin had to be called in before the trip was finally accomplished. It is true that the faithful but outdistanced horse only contributed aid on two miles of the drive, but during that small stretch his services were invaluable. It is doubtful if the truck would have ever drawn into the factory yard at Delavan without his timely aid.

The roads in Indiana, now undergoing construction and repair processes, and pelted by 20 days of rain in April, were the worst over which a truck was ever caused to travel. The Woonsocket vehicle was not the only one in difficulties. There were hosts of them lined up along the side of the roadway, the drivers alternately cursing their luck and praying for a dry spell to harden the sea of mud which stretched for miles and miles.

1200-Mile Haul to Wisconsin.

In spite of obstacles that would blanch the stoutest heart and wring profanity from lips unskilled in the swearer's art, the Rhode Island truck, with its Massachusetts burden, rolled up to the Wisconsin plant just 15 days after it was loaded at the Attleboro dye works. And the vehicle showed no evidence of its long drive save a liberal coat of mud, testimony to its record jaunt through mire that was all but impossible to pull through.

The driver's road map disclosed the fact that the closed highways and the constant detours enlarged the distance by scores of miles over the 1167 miles provided in the original route.

There was not a single mishap to the machine, the total cost for repairs or parts on the entire grind being 25 cents. The gasoline consumption was about $3\frac{1}{2}$ miles per gallon.

"Sure, I'll try it again," was the comment of Telesphore Desrosiers, proprietor of the Globe Coal Co., which has seven other motor machines in a truck service separate from its coal business. "Those Indiana roads will be all right next year and when they are Boston to Chicago will be easily made in eight days and the trip will only be a joy ride. The incessant rain was the cause of all of our trouble."

The two drivers had been asked to make 150 miles a day, which would mean eight days for the trip out and eight days back. Two extra days had been thrown in each way for unexpected contingencies and an allowance of 20 days made for the run to Wisconsin and back.

On 160-Miles a Day Schedule.

Although a low bridge at Palmer, Mass., and another in New York state forced the crew to partially unload in order to get through and then reload, causing considerable delay, the 150-mile

schedule was more than maintained for the first five days.

Driving from 12 to 15 hours daily the pilots whisked the vehicle into Toledo, O., 801.8 miles from the starting point in Attleboro on the evening of Sunday, April 25. They had left Attleboro the afternoon of Tuesday, April 20, making a short stop in Woonsocket and leaving that city at 6 p. m. For the five days an average of a trifle better than 160 miles had been run, beating the allowance by 10 miles a day.

Going out of Toledo, however, the schedule was knocked sky-high. Toledo to South Bend, Ind., was from bad to worse to unspeakable. In two days and a half little more than 100 miles was covered and in one day the men put in 12 hours at the wheel, the total distance covered in that time being $6\frac{1}{2}$ miles.

Roads a Sea of Mud.

The constant rains had made every road impassable. The main highway was closed with the exception of a point here and there where a mile or two of cement roadway would be found. It was a case of detour after detour and each side trip revealed new horrors. Every turn would bring the travelers in sight of one or more trucks laid up along the roadside waiting for the sun to come out and bake the mud into a hard enough surface to make the going safe.

Every few miles would find the truck stalled in the mud. The jacks would come out, the cranking process performed and a fresh start made. Around Edgerton, Ind., conditions were deplorable and the drivers hardly know how they negotiated the 15 miles between that point and Bryan, Ind.

12 Tons on Two-Ton Bridge.

Twice the men faced actual danger of injury. At the foot of a steep hill they came at top speed to a bridge which carried a sign notifying drivers that any person driving a vehicle over it weighing with load more than two tons, would do so at his peril. The only thing to do was



The Truck on Arrival at the Mills of the Bradley Knitting Co., at Delavan, Wis., with Its \$35,000 Freight in Fine Condition, Despite Heavy Storms.

to shoot across and "shoot" they did. Over the bridge went the big truck and its seven tons of yarns. The nearest previous experience to this was encountered by the drivers when as boys they ran "bendies" on the shaky ice. The bridge trembled like a reed in the wind, but failed to crack and vehicle, load and drivers got across whole.

Climbing another wet and slippery hill the machine stalled because of long overhang of the heavy load, the truck reared and the front wheels went up in the air. One of the drivers jumped out and put a boulder under each rear wheel. Then the pair were forced to unload much of the contents of the truck. The machine went along to the top and then the pair were obliged to roll the heavy bags several hundred yards to the crown of the elevation.

Indiana Roads Impassable.

Early Wednesday morning, April 28, after being out eight days, the pair decided that they had exhausted their resources. A wire was sent to Mr. Desrosiers from Bryan, Ind., informing him of the situation. On this day while digging the machine out of a mudhole one of the drivers, Albert Lapierre, broke his right arm at the wrist while cranking. The arm was put under a physician's care and the men awaited their boss, who got in Saturday morning.

Mr. Desrosiers decided to get two two-horse teams and transferring most of the load the horse drawn wagons and truck started over cross roads through woods and reached a more promising highway, two miles distant. Then the horses were turned back to their owner and Driver Lapierre was sent home.

The roads from this point to Chicago were far from good, but were a vast improvement on what had been traversed. It took Driver Pardis, with Mr. Desrosiers as a passenger, and his seven-ton load again two days and a half to make the 175 miles to Chicago, where the outfit landed Tuesday noon, May 4.

The truck left for Delavan next day, the last 94-mile jaunt to the end of the trip being completed at 5 p. m. Before putting up for the night truck and driver posed for a picture for Motor Truck.

No worth while repairs had been made to the machine and it was in as sterling condition when it reached the Wisconsin plant as it was when it left the Attleboro, Mass., factory 15 days before. The closing of the main highway and the havoc raised with the Indiana back roads by the continuous rain were the obstacles which turned what might have been an ordinary trip into a veritable nightmare.

Had conditions been right the White truck might have freighted with a choice of two return loads to New England. Learning of the trip and being badly in need of machines, Manager Burnett of the Harley-Davidson Sales Co., 82 West Friendship street, Providence, had offered a contract to take 30 motorcycles from the Harley-Davidson factory at Milwaukee, Wis., to Providence. Because of inability to get parts this factory is turning out but 60 machines a day against a normal production of 200, and this load would be half the factory's daily output.

The Bradley Knitting Co. had also been engaged in finding a return load and the Madison, Wis., Chamber of Com-

merce had rounded up a consignment of storage batteries for Boston which the Rhode Island truck could have carried.

Mr. Desrosiers returned to the East without definitely contracting for either haul. He left directions with Driver Paradis not to take over a three-ton load from Wisconsin to Cleveland, partly because of the soggy roads, and also because he had undertaken to bring from Cleveland to Whitinsville, Mass., for the Whittin Machine Works, at least one electric welding machine, each unit of which weighed one ton. He also instructed Paradis to come back to Cleveland by way of Fort Wayne, Ind., dodging the route taken on the outward run at any cost.

The truck pilot obeyed the owner's injunction and left Delavan Friday morning, May 7, empty. He found only one of the one-ton welding machines awaiting him at Cleveland. After taking this article aboard he hurried home, reaching Woonsocket, Saturday night, May 15, at 11:30.

The return trip over the revised route of over 1200 miles from Delavan to Rhode Island, although completed in eight days, proved that this period is hardly long enough for the journey, although it might be when the roads are right and no detours are necessary. The back run was made without load from Delavan to Cleveland and with but one ton from Cleveland to Woonsocket and in order to finish within eight days the truck was forced to travel from Albany to Woonsocket, about 180 miles, on the last day. The vehicle left Albany at 8 a. m. and was in its home garage a half hour before midnight.

OF LATEST TRADE LITERATURE

ONE TRUCK BEATS 20 MULES.

"Duplex Doings," the monthly publication of the Duplex Truck Co., Detroit, Mich., tells of two recent unique works with Duplex trucks. One was hauling a 29-ton girder by the Echo Motor Car Co. of Tonawanda, N. Y., and the other was the winning of a competition haul by a Duplex four-wheel drive truck against five four-up logging teams. The hauling was over four miles of ordinary wagon road and half a mile in the timber. In one day the Duplex truck hauled more feet, log scale, than the 20 mules and at one-fourth the cost.

THE DISTEEL BULLETIN.

"The Disteel Bulletin" came off the press for the first time this month. It is the output of the advertising department of the Disteel wheel division of the Detroit Pressed Steel Co. Its purpose is editorially defined "to supply the missing link between the Disteel Wheel Factory and yourself." Included in the splendid assortment of information within its columns is the statement that Disteel wheels had been adopted by but two motor car manufacturers in July, 1919, against 55 in March of this year.

House Organ Peals

We may never see another year like 1920 for selling trucks.—The Denbyman.

Far-seeing business men in every industry are preparing for the day when competition will be keen and when the best prepared sales plan will be needed to get the business.—Federal Traffic News.

A successful business cannot be built up on promises.—Selden "Truck Transportation."

More speed per mile means more miles per day.—Duplex Doings.

Cutting the price is always bad business.—Acme Angles.

The jobber, dealer or salesman who lives in the past is sliding down hill.—The Silver Edge.

CLARK EQUIPMENT COMPANY IN PUBLISHING FIELD.

The employees of the Clark Equipment Co., Buchanan, Mich., launched a plant newspaper on April 17, which began life as an orphan, being nameless. Rather than choose a name which might not mean anything, the management decided to get along with a question mark at the top of its front page until some

employee would come along with the right name and draw down a prize of \$10 offered for the same.

But what's in a name in this case. The publication carries the inside doings of the plant and is a real family newspaper, the Clark workers being one large family, over 60 per cent. of them being stockholders in the company. Judging by the quality of several of the special articles in the first number several of them show a keenness and insight into human nature which will make them executives some day. The publication is aimed to interest the employees and it surely must hit the target.

"AVAILABLE" FACTS.

The Available Truck Co., North and Kilpatrick avenues, Chicago, Ill., has issued an artistic folder giving valuable data concerning the construction units of its worm drive trucks and dimensions and other details concerning the parts entering into the building of the truck, "Available always since 1910." A sketch of the factory in colors embellishes the front page and the first Available of a decade ago—still in service—with several of the modern vehicles, are shown.

HUNDRED TRUCKS A DAY SERVE NEW YORK STEAMER FREIGHT LINE

ALTHOUGH the Blackstone Valley Transportation Co., Inc., which runs a Pawtucket, R. I.-New York steamboat line, accepts only freight from and to two cities, Pawtucket and Woonsocket, it takes 100 trucks a day to load and unload its two steamers, each of 100-ton capacity.

The company is more or less a private concern, being controlled by Pawtucket and Woonsocket capital, and being designed to primarily serve the manufacturers and business men of the two communities named. Only when business is in the dumps, which has not happened in many days, is freight taken for concerns or from concerns outside these cities.

The inadequate transportation facilities in New England is shown by the subterfuges to which firms outside of the zone of the company's activities resort in order to make use of this service. Not long since the company's transportation man at New York contracted to deliver 50 tons of rubber to a Pawtucket company. When the rubber reached the Rhode Island end it was readily perceived that the receiver of the big rubber shipment was a knitting concern which could have no use for the product. This belief was confirmed when trucks from Canton, Mass., came along and carted off the rubber to that city.

A short time ago a shipment of 50 tons of plug tobacco arrived for a Pawtucket tobacco dealer who could not dispose of that amount in a couple of centuries. A fleet of trucks from Boston was soon at the Pawtucket pier and the big tobacco cargo was whisked off to the Massachusetts capital. It was later learned that most of this tobacco went to New Hampshire, where the supply had been short for a considerable period.

Handles 200 Tons Daily.

At the company's Pawtucket freight terminal 200 tons are handled daily, 100 arriving and the same amount being

shipped. The two steamers in service are the Pawtucket and Woonsocket. Freight is taken for Philadelphia and is placed aboard lighters at New York and sent through the Raritan canal to its destination.

Because passage through the canal is sometimes delayed and also in order to avoid the terminal delay at Philadelphia a number of Philadelphia patrons have made arrangements to have their goods taken off the boat at New York and sent by truck to the Quaker City. The Blackstone Valley Co. has a contract for this service with J. M. Lowden & Co., New York City, and two or three trucks from that concern run daily to Philadelphia with shipments taken from Rhode Island to New York by boat.

Trucks Deliver to Door.

The Philadelphia firms, in addition to avoiding the time and trouble involved in getting their product off the boat in that city, also gain the advantage of having the trucks deliver right to the door of store or factory, not only in Philadelphia, but in Frankfort and other suburban sections.

More than a score of Woonsocket mills ship over the line and many of these have their freight taken off the boat at New York City and shipped by truck to destination points at Chester, Pa.; Trenton, Passaic and Garfield, N. J.

These manufacturing concerns include the River Spinning, Desurmont Worsted, Falls Yarns, Woonsocket Falls, Bernon Worsted, Guerin Spinning, Montrose Worsted, Perseverance Worsted, Model Spinning and the American Wringer Co.

Stone's Express Co. and the New York, New England and Philadelphia Fast Freight line furnish the trucks on which most of these goods are transported from New York City to mills in Pennsylvania and New Jersey. Most of the freight thus taken is unfinished and is given the finishing touches in the cities named and then either returned to New England or

sent to the New York salesrooms or warehouses.

Big Contract Turned Down.

The Blackstone Valley Co.'s policy of adhering to the plan of serving only the cities where the capital to launch the institution was forthcoming is subject to constant attack by shippers who are in a rush for their product and has also cost the company considerable money. Yet its principle has been maintained through thick and thin.

During the past spring the company turned down an attractive contract to carry 3,000,000 tons of cotton from Boston to Philadelphia. The offer was turned over to another company which carried the cotton at \$17 a bale, about a half dozen times higher than the rates the Rhode Island organization has in effect. The company has a classified rate of from 14 to 46 cents per hundred for freight from Pawtucket to New York and offers the cheapest known method of transportation between these points.

With 200 tons of freight going and coming daily there is always from a few to more than a score of trucks lined up in and around the company's Pawtucket freight terminal. Some are five-tonners, but there are many one-tonners and others ranging up to 3½ tons, which leads to an estimate of about 100 trucks a day driving up to the terminal. The lighter trucking is done inside the station and the heavier materials are taken in and out through a large window equipped for the purpose.

The clamor for transportation is attested to by the steady demand for the freight facilities offered by this concern. All steamboat space is usually booked two days ahead and when a shipper changes his mind suddenly or some other reason allows room for five, 10 or 20 tons at the last moment, General Eastern Agent J. D. Michaud can call any one of a dozen firms and have the necessary amount at the wharf in jif time.

SELDEN TRUCK A CLIMBER.

A Selden truck recently convinced doubting Thomases of its hill climbing power by ascending a hitherto impassable grade for the Ohio Fuel Supply Co. near South Bloomington, Hocking county. A five-ton Selden, fully loaded, went up the long, hard grade without a falter. One stretch had an elevation of 18 feet in every 93 feet traveled. Later the Selden repeated the climb many times.

ADVERTISING FIRM MOVES.

The Husband & Thomas Co., advertising, has removed from 58 East Washington street, Chicago, to larger quarters in the new business district north of the Boulevard Link. The company now occupies the entire building at 165 East Erie street.

MORE ADVERTISING IS PLEA OF PRESIDENT HARPER.

H. B. Harper, president of the Overland Harper Co. and president of the National Automobile Dealers' association, addressed the Motor Truck association of Philadelphia late last month, sounding a plea for more advertising by truck men. Councilman William W. Roper, Princeton foot ball coach, also spoke, calling for better roads and also advocating the plan of giving to Philadelphia part of the automobile license fees, all of which now go to the state.

TRUCK TRAINS OF WHITES.

The delivery of White trucks from the factory at Cleveland to Philadelphia has been uninterrupted during the railroad holdup, the machines coming over the road in truck trains.

PRAIRIE SCHOONER ON TRUCK.

A prairie schooner body, with a passenger car seat and top for the driver, all mounted on a two-ton Republic chassis, is a unique vehicle used for both passenger and freight service by the Tungsten-Comet Mining Co. of Panaca, Nev., which is situated 17 miles from the nearest railroad. This outfit handles all of the company's traffic between town and mine, including passengers, hauling of express shipments, high grade concentrates, etc.

THE ROAD MASTER IS OUT.

Master Trucks, Inc., Chicago, Ill., has entered the publishing business, its output being a house organ entitled The Road Master. It is a 16-page booklet with plenty of readable truck lore and illuminating illustrations.

NATIONAL CHAMBER OF COMMERCE CONSIDERS TRUCK TRANSPORTATION

The highways took their rightful place alongside railways and waterways at the eighth annual meeting of the Chamber of Commerce of the United States at Atlantic City, April 27-29. As the session was devoted to forwarding production, it was natural that motor transportation, the most powerful agency at hand to increase the products of the nation's industries and farms, should be in the spotlight. In all quarters it was a case of hats off to the truck.

George M. Graham, general sales manager of the Pierce-Arrow Motor Car Co., grasped the opportunity to place squarely before the leading business organizations of the country the value of the truck in advancing the public weal. Mr. Graham addressed the general convention and marshaled his facts and figures in such imposing array that no auditor could fail to get the message of what the truck can do to push America onward in the paths of progress.

At group meetings the automotive industry played a big part an address by Windsor T. White, president of the White company and vice president of the Motor Truck Division of the National Automobile Chamber of Commerce, Inc., on "The War's Development of Motor Transportation" and an address on "The Federal Government's Part in the Country's Highway Programme." by Roy D. Chapin, president of the Hudson Motor Car Co., and chairman of the Highways Committee of the National Automobile Chamber of Commerce, Inc., being enlightening, educational and impressive.

For National Highways.

It was at a group meeting on highways that the apparent opposition to a national highway system on the part of the present administration was brought out through the reading of a paper prepared by Thomas H. MacDonald, director of

the Bureau of Public Roads, advocating strictly local road control. The issue was taken up and speaker after speaker forcefully showed the advantages of a national system. A resolution to indorse the national highway system plan went through without a dissenting vote, the few opposed recognizing their defeat by remaining silent.

It was good news to automotive men to see the truck given proper recognition at the highway session. It was agreed that it had become a dominating factor as a transportation unit and was in line for still greater development. The use of the passenger car for passenger transportation was also lauded.

Mr. Graham in his address on the relation of highway transportation to increased production, showed that 10,000 motor truck haulage lines are now registered with the National Automobile Chamber of Commerce by corporations or firms. In addition, it is estimated that 10,000 lines are operated by private individuals. There are also 3000 rural express lines in operation and the number is steadily increasing.

Insurance Against Strikes.

"A properly organized system of food transportation over the highways constitutes a national insurance against the results of railroad strikes," said Mr. Graham. "It will mean that the people are not dependent on one kind of transportation for the necessities of life. Railroad strikes will be fewer and their effects will be less distressing if we can turn to an alternative kind of food distribution. Why not then organize in advance for such contingencies so that the vehicle of the highway may ever be swiftly ready to protect the health and life of the community during the continuance of labor disputes?"

Regarding the relation of roads to

transportation Mr. Graham stated that the automotive industry recognizes the menace to the highways of excessively heavy trucks and advocates that no vehicle weighing more than 28,000 pounds gross load should be permitted on the roads as now constructed.

"We are equally convinced, however," he added, "that the highways of the future should be the servant of transportation, not its master. They should be prepared to accommodate a constantly increasing volume of haulage by whatever size of truck shall prove most swift, efficient and economical."

Auto Men Present.

Among the representatives of the automobile industry attending the conference were:

National Automobile Chamber of Commerce, Inc., Charles Clifton, Buffalo, N. Y.; John N. Willys, New York, N. Y.; Alfred Reeves, New York, N. Y.; R. W. Johnston, Washington, D. C.

Automobile Equipment Association, F. B. Caswell, Toledo, O.; S. F. Beech, Chicago, Ill.; L. Safford, St. Louis, Mo.; W. L. Hiskamp, St. Louis, Mo.

National Automobile Underwriters Conference, Douglas F. Cox, New York, N. Y.

Automotive Wood Wheel Manufacturers' Association, S. Vance Lovenstein, Frankford, Philadelphia, Pa.; D. L. Porter, Lansing, Mich.; Carl Bimel, Portland, Ind.; Thomas A. White, St. Mary's, O.; W. C. Torrey, Jackson, Mich.; G. A. House, Jackson, Mich.; C. H. Seabright, Flint, Mich.; C. B. Bannister, Muncie, Ind.; E. A. Evans, Moline, Ill.; Phineas Jones, Newark, N. J.; C. C. Carlton, Lansing, Mich.; A. D. Smith, Alma, Mich.; E. J. Fischer, Terre Haute, Ind.; J. W. Heron, Aurora, Ind.; H. A. Long, Chicago, Ill.

OF DISTRIBUTORS AND AGENCIES

NEW STANDARD DISTRIBUTORS.

The Standard Motor Truck Co. has signed contracts with the following distributors: The General Commission Co. of Toronto, Ont., to handle its product in Eastern Canada; the Manhattan International Corporation, New York City, to take charge of sections in the North Atlantic and New England states not already cared for by distributors; the P. S. Carr Motor Co., Atkinson, N. C., and the Kennedy-Maddox Motor Co., Sulligent, Ala.

CHICAGO HOUSE OF KELLY.

The Kelly-Springfield Motor Truck Co., Springfield, O., has taken a 20-year lease on the building at the corner of Michigan avenue and 25th street, Chicago, and will use it as its Chicago headquarters, beginning June 1. It is now occupied by the Winton Car Co.'s branch. The

building is modern in every respect and is four stories in height. It was originally built for truck purposes.

ARMLEDER TRUCK AGENCIES.

The Armleder Motor Truck Sales Co., has been formed at Dallas by E. C. Poole and George S. McGhee for the sale of the Armleder trucks, manufactured by the O. Armleder Co., Cincinnati, in the State of Texas. The El Paso agency has been awarded to the Sturtevant & Patty Co. Announcement is made that these trucks will be distributed in Buffalo, N. Y., by Frank A. Lobee & Son.

CLYDESDALE SERVICE PLANT.

The Clydesdale Motor Truck Co., Chicago, is to erect a one-story service building and repair works, 120 by 75 feet, to cost about \$80,000, at Calumet avenue and 23rd street, that city.

\$110,000 PACKARD BRANCH.

The Packard Motor Car Co., New York City, is to erect at once a branch house in Springfield, Mass., at a cost of \$110,000. It will be located at 721-723 State street and will include garage, salesrooms, offices and service station.

HANDLING G. B. TRUCKS.

The Western Automotive Co., with W. C. Brown in charge, has been formed at Sioux Falls, S. D., and will handle Gramm-Bernstein trucks in that state and in part of Iowa and Minnesota.

DAY-ELDER IN MONTANA.

The Butte, Mont., Motors Co., has been formed to handle the Day-Elder worm drive truck, also the Cole Aero Elights and the Studebaker Sixes in that territory.

HAULING 400 TONS OF WRINGERS FROM RHODE ISLAND TO SYRACUSE

ONE of the largest trucking contracts ever signed in New England was that to which the Syracuse Washing Machine Co., Syracuse, N. Y., and the Hamlet Trucking Co., Woonsocket, R. I., John F. Letendre, manager, recently affixed their signatures.

This contract calls for the delivery of 40,000 wringers from the American Wringer Co., Woonsocket, R. I., to the plant of the Syracuse firm, with a return load from Syracuse to Worcester, Mass., or from Newburg, N. Y., to Woonsocket, on each trip.

It will take something like seven months to carry out the contract, through which wringers are provided for the entire output of the washing machine factory. The wringers are being delivered at the rate of about 5000 per month.

White, five-ton trucks are doing the hauling. Two of them make the run one week and three the next. Each truck carries 500 wringers, weighing about five tons. In this way 1000 wringers are delivered on the two-truck trips and 1500 on the three-truck journeys, making a total of 5000 every four weeks.

On every second run the trucks diverge at Albany on the return trip and go to Newburg, where each gets five tons of whiting, in 100-pound sacks, to bring to the Woonsocket plant of the American Wringer Co., this material being used in the manufacture of wringers.

On the next haul the trucks take washing machines from Syracuse to the Ham Electric Co., Worcester, Mass., New England distributor for the Syracuse company. About 30 of these machines had been taken up to May 12.

Return Load at Newburg.

On the outgoing haul the route is as follows: Woonsocket to Worcester, 28 miles; Worcester to Springfield, 51; Springfield to Albany, 92; Albany to Utica, 95; Utica to Syracuse, 50.6; a to-

tal of 316.6 miles. When washing machines make up the return load the same back route is taken.

To get the whiting the trucks come back from Syracuse to Albany and then shoot off 94.5 miles from that city to Newburg, crossing to Hartford, thence to Willimantic, Putnam and into Woonsocket. The mileage on this trip is as follows:

Syracuse to Albany, 145.6 miles; Albany to Newburg, 94.5; Newburg to Poughkeepsie, 16.3; Poughkeepsie to Canaan, 47.9; Canaan to Hartford, 43.8; Hartford to Putnam, 56; Putnam to Woonsocket, 29.5; total, 433.6 miles.

Manager Letendre planned to use his five-ton White, with a 30-foot tractor body, and fifth wheel, on this Syracuse trip and tried it once and only once. With something over 12 tons of wringers aboard, making about 20 tons in all, the truck was held up as being in violation of the state laws in nearly every city, town and village in New York state.

The fact that the authorities could find no scales big enough to weigh the load alone prevented action and in every case the truck was finally allowed to proceed with a warning. The warning has been heeded and the giant vehicle will be used hereafter in states where there is no load limit or where the limit is properly computed on pressure per inch of tire.

Trucks Overhauled Each Trip.

Five days are allowed for the regular trip to Syracuse and return and six days when the Newburg call is made. As a matter of fact Manager Letendre calls it a week's job. He allows an entire day for getting the truck ready. The driver in charge is asked to do nothing else the day before one of these journeys but get his truck in shape. It has been found that this plan pays, there being little or no trouble experienced on any of the drives to date. With the same driver and under the same conditions the

fuel cost of sending the trucks to Syracuse frequently varies as much as \$7 or \$8.

It is possible that with good weather and better roads and the calling off of freight embargoes, the three trucks may be run weekly, and possibly four. The Syracuse plant could use and would like to have 2000 wringers delivered weekly, which would call for four trucks. Manager Letendre is anxious to heed this request, but has been unable to do so. If conditions mend a fleet of four trucks, bearing 2000 machines, weighing 40,000 pounds, may be sent on every trip.

Manager Letendre is pleased with this contract and declares it brings pleasure into the trying game of conducting a trucking service. By giving over a day to putting the trucks in trim they set out in prime condition and are gone a week, during which there is seldom delay. The roads are good and the men know every inch of the way thoroughly. There has been no accidents and practically no breaks. The manager has the reward of knowing he is doing a big job well.

To Philadelphia Regularly.

The Hamlet Trucking Co., which has 10 trucks, eight five-ton Whites, a five-ton G. M. C. and a 3½-ton Federal, has again resumed regular service between Rhode Island and Philadelphia, which was in vogue during the war, and was given up after the armistice was signed. This action was taken at the behest of Woonsocket mills, many of which have regular contracts with this concern. One or two trucks go to Philadelphia each week. Five days are allowed for the round trip, the actual driving time being 15 hours a day, a total of 75 hours.

This company has recognized the value of pneumatic tires and as fast as new wheels can be put on the front of each truck is being equipped with a pair of U. S. Knobby Cords.

BOSTON BUYS SEVEN LA FRANCE FIRE WAGONS.

The city of Boston made contract for the purchase of seven new pieces of fire apparatus with the American La France Fire Engine Co. on April 28, just in time to get in under the old price before the advance on May 1. The total cost of the seven vehicles is \$70,908.

The following pieces are included in the contract: Two type 14-6 motor city service ladder trucks, six cylinder, at \$8156 each; one type 31-685 aerial ladder truck motor, six cylinder, at \$14,406; one type 12, 1000-gallon motor combination pump and hose car, six cylinder, at \$12,055; one type 75, 750-gallon motor combination pump and hose car, six cylinder (with privilege of purchasing another at the same price), at \$11,555; two type 75 combination hose and chemical cars, six cylinder (with privilege of purchasing another at the same price), at \$8290.

WILL MOTORIZE INDIANAPOLIS FIRE DEPARTMENT.

Indianapolis, Ind., is making ready to completely motorize its fire department at a cost estimated to be between \$450,000 and \$500,000. The growth of the city calls for additional apparatus and the difficulty of getting horses suitable for the work and the expense of feeding them are among the reasons why the city fathers feel that the department should be entirely motorized.

FIRE TRUCK A NECESSITY.

East Greenwich, R. I., is about to buy a motor truck for its fire department. When it is taken into consideration that this is a particularly hilly town and that at present the fire department has to call a livery stable by telephone to get a horse when the fire bell rings, the truck would seem to be a necessity rather than a luxury.

RULES TO GUIDE DEALERS.

In a recent letter to dealers President H. W. Acason of the Acason Motor Truck Co. promulgated three rules for their guidance as follows: All service must be for cash C. O. D.; all installment sales must be accompanied by a 25 per cent. cash payment; no trucks should be taken in trade except Acasons.

COMPLETE FIRE MOTORIZATION IN PHILADELPHIA.

Among the projects outlined in the city's needs in a recent statement by the Philadelphia Board of Trade is adequate and efficient motor fire apparatus.

BUYS HUNTER FIRE TRUCK.

The village of Penn Yan, N. Y., has purchased a Hunter hook and ladder motor truck and will issue \$4500 in registered bonds to pay for the machine.

UNUSUAL PHASES OF THE INDUSTRY

BANK REFUSES REDISCOUNT ON AUTOMOBILE PAPER.

The National Automobile Chamber of Commerce, Inc., has protested a ruling of the Federal Reserve District bank of Kansas City that automobile paper would not be acceptable for rediscount. The bank has restricted credit on all except paper based on trucks exclusively on the ground that the industry is using an enormous amount of money and man power needed in essentials. While similar views are not held by bankers in other districts, it is felt that every effort must be made to have this ruling reversed. The shortage of funds in Kansas City at this period are ascribed to heavy real estate transfers.

BUSES IN DETROIT MAY 15.

When motor bus transportation begins in Detroit, May 15, there will be a seat for every passenger, no stops being made after the car is once filled. A complete unit of 20 buses with repair shop and other equipment will arrive from New York the first week in May. It is planned to give 2½ minute service and to run only on lines where there are no street cars or where the trolley service is inadequate. The double-deck cars provide seats for 48. The fare will be 10 cents. Many factories have asked to have the lines run to their plants. The project is indorsed by the leading civic bodies of Detroit.

TRUCK INDUSTRY FIGURES.

The "Insurance Field" figures the motor trucks in use in the United States at 480,000; number of farmers operating them, 78,789; number of manufacturers using them, 65,928; retailers, 64,486; truck service expressed in ton miles, 6,660,000,000; cost of service at 18 cents per ton mile, \$1,188,000,000; cost of service if by horse-drawn vehicles, \$1,650,000,000; estimated annual saving by use of motor trucks, \$462,000,000; cost of hauling from farm by motor truck, 15 cents per ton mile; by wagon, 31 cents per mile.

TO TAKE TRUCK CENSUS.

The Council of National Defense is preparing to take a census of the motor trucks now in use in the United States. It will be found that the number is considerably under the figures given out by enthusiastic, but misguided experts. The council will also secure data and make plans whereby the trucks of the country can be mobilized at a central point in each state in such an emergency as a nation wide railroad strike.

INTERNATIONAL PRODUCTION.

The International Motor Co. reports net profits of \$968,057 for the first quarter of 1920 after allowing for interest charges and Federal taxes. In that period 1870 trucks were produced.

Automobile Paper Is Not Rejected by Kansas Banks

Governor Miller of the Federal Reserve Bank, Kansas City, denies the report that he has ordered the banks in his district to discriminate against automobile paper. His statement was in reply to a protest from the National Automobile Chamber of Commerce, Inc. It follows:

"The Federal Reserve Bank of Kansas City has not requested and will not request its member banks to discontinue loans to the automobile industry or to call such loans. Our executive committee is, however, scrutinizing very closely all paper presented for rediscount and accepting only such as it deems desirable at this time. It is not practical to enumerate the classes of paper declined since we have been scrutinizing paper of every class, in some instances agricultural and commercial paper, as well as automobile and jewelry."

NEW INSURANCE RATES.

A substantial increase in public liability rates on commercial vehicles and a radical increase in collision rates for all classes are provided in the new insurance figures formulated by the National Workmen's Compensation Bureau, applicable to all new business April 15 and to all renewals from June 1. General rate increases in the congested traffic territory amount to approximately 35 per cent. for commercial cars. Although the rating is still based on the car's valuation, there will be no increase when the maker advances his price. Collision rates vary but average at least 40 per cent. over last year's rates. Territories have been slightly modified.

GOAT-GETTING A FLOURISHING WESTERN INDUSTRY.

At Guadalupe Island, about 200 miles off the California coast and 300 miles from San Diego, that state, the Spanish missionaries made settlement, and for a time labored with the natives, and when they retired left behind them a flock of goats that multiplied to many thousands.

Several years ago an American who knew of these animals and their commercial value developed a very lucrative business, taking vessels to the island, capturing the goats in large numbers and taking them to San Diego, where they were quarantined and then shipped to Los Angeles and San Francisco. The flesh was sold for food, the skins were tanned for glove making and other purposes, the hoofs for glue, the horns for buttons, and the unsalable parts were converted into fertilizer.

The accompanying illustration shows the manner of unloading the goats from a steamer, hoisting them over the side with a windlass and a rope around the horns of three or four at a time, and dropping them into a Federal truck owned by R. E. Kerr, that hauls them to a San Diego railroad stockade, there to await inspection and shipment. According to Mr. Kerr, he has driven the truck about 40,000 miles in two years at a total mechanical expense of \$70.

ONE REPAIR MAN; 31 TRUCKS.

One repair man for a fleet of 31 Republic trucks meets the requirement of Sam Davis, a Toledo, O., coal dealer, who has learned by experience that he can sufficiently maintain his equipment with this minimum of mechanical attention. These Republic trucks, most of them 3½ tonners, are subjected to all the rough usage usually met with by vehicles used in hauling coal.



Hoisting Goats, Captured at Guadalupe Island from a Ship's Deck to a Federal Truck for Transport to a San Diego Stock Yard for Quarantine.

PROMOTIONS AND NEW CONNECTIONS

VISIT MID-WEST FARMERS IN TRUCK INTERESTS.

To learn first hand just what the farmer thinks of motor trucks and what he wants James E. Baird, advertising manager of the General Motors Truck Co., and W. B. Hall of the Green, Fulton, Cunningham Co., Detroit, are making a close survey of the mid-west farming region. They will spend several weeks in Kansas, Nebraska, Iowa, Texas and Oklahoma.

PACKARD MEN MEET.

District managers and service men of the Packard Motor Car Co. from Portland, Me.; Boston and Worcester, Mass., and Providence, met at the Narragansett hotel in the latter city April 23, when Service Manager Pace of the Providence branch gave a talk on the work at the factories, the increased service facilities and the company's plan for the extension of the Ship-by-Truck movement.

JOINS WALES AGENCY.

Raymond E. Plimpton, former assistant editor of Power, and a former publication manager and field secretary of the Journal of the Society of Automotive Engineers, has joined the Wales Advertising Agency of New York City and will handle technical and semi-technical advertising campaigns.

NEW RAYFIELD BUYER.

The Beneke & Kropf Manufacturing Co. of Chicago, maker of Rayfield carburetors, has appointed William E. Hutchinson purchasing agent. He was formerly with the Denby Motor Truck Co. of Detroit and the Edwards Valve and Manufacturing Co., East Chicago, Ind.

JOINS INTERNATIONAL MOTORS.

Andrew J. Morrison joined the International Motor Truck Co. May 1 as engineer of works. He comes from the J. Stevens Arms Co., Chicopee Falls, Mass., where his associates gave him a royal send off when he relinquished his duties April 24.

AUSTIN'S NEW VENTURE.

Lewis A. Austin, general manager of the Bowen Products Corporation, Chicago, formerly with the Mais Motor Truck Co. and the Studebaker Corporation, and well known in the automotive industry, has announced his engagement to Miss Vivian Quinby of Kansas City.

BURKE TO MARTIN CO.

The Martin Motor Truck Co., St. Louis distributor of the Diamond T and Denby trucks, has secured James B. Burke as sales manager. He succeeds R. B. Thompson, who has been made district manager in Texas and Oklahoma.

AD MEN AT INDIANAPOLIS.

The 16th annual convention of the Associated Advertising Clubs of the World will be held at Indianapolis, Ind., June 6-10. Secretary of Agriculture Edwin T. Meredith will preside at one of the sessions and will also deliver an address. There will be department sessions daily of the Agricultural Publishers' association, the Associated Business Papers and other publishing organizations. An historical pageant and parade celebrating the 100th anniversary of the city, shows, banquets, theater parties and plenty of music will be included in the elaborate programme.



N. S. Reed, Consulting Engineer and Sales Director, Hinkley Motors Corporation.

NEW ENGINEERING CONCERN.

Archibald Black and Donald R. Black have opened offices in the Evening Star building, Washington, D. C., and will specialize in consulting engineering on aircraft and light motor vehicles and also the technical representation of manufacturers in the automotive field in their dealings with the government. Both have been in the service of the United States and are recognized as leaders in their field.

TOWER SALES MANAGER.

The Tower Motor Truck Co., Greenville, Mich., has named as general sales manager W. G. Lefevre, who was a number of years special representative for the Kelly-Springfield Motor Truck Co., Springfield, O.

GOODYEAR GOOD ROADS BUREAU.

The Goodyear Tire & Rubber Co. has placed C. M. Wood, formerly sales engineer of the H. W. Johns-Manville Co., and widely experienced in road engineering and highway construction, in charge of its Good Roads Bureau.

TWO GIRLS IN COLUMBUS, O., RUN TRUCKING CONCERN.

The truck industry could hardly get along without the fair sex and a general welcome will be extended Kathryn C. Gallagher and Mary A. Steinberg, who have formed a partnership under the name of Gallagher & Steinberg in Columbus, O., as transportation engineers to conduct a motor transportation business, operating trucks for road building and construction work and for all kinds of hauling.

The company's plan is to bring truck owner and user together and save them the inconvenience of securing trucks or contracts. At present the concern is operating 75 trucks in this manner and the business is constantly increasing.

TRAFFIC PUBLICITY MAN.

General Sales Manager Harry H. Hawke of the Traffic Motor Corporation, St. Louis, has appointed Millard S. Binney its publicity manager. Mr. Binney has been sales manager of the Omaha, Neb., branch of the Fulton Motor Truck Co., and before the war was connected with the Chalmers Motor Co.

STERLING GETS BERGMANN.

A. C. Bergmann became general sales manager of the Sterling Motor Truck Co., New York City, on May 1. He has been with the Standard Parts Co. and the Mercer, Fiat and Simplex companies. He is vice president of the Motor Truck Association of America and chairman of the Metropolitan Section S. A. E.

M. T. S. M. TO OPEN OFFICE.

The National Association of Motor Truck Sales Managers has engaged H. D. Dabney, formerly of the Society of Automotive Engineers' headquarters staff, as permanent secretary, and he will open a permanent office in Detroit on June 1.

STUDEBAKER "AD" MANAGER.

O. S. Barrett has been named advertising manager of the Studebaker Corporation, with which he has been connected for 22 years, recently as head of the vehicle division advertising department. He succeeds R. C. Sackett.

BUCK DETROIT BRANCH.

The Buck Co. of Indianapolis, Ind., which already has a branch in Cleveland, is opening a branch in Detroit for the sale of Autocar trucks. At other points the company also distributes Studebaker and Diamond T trucks.

The Oneida Motor Truck Co. has appointed H. J. Butler, formerly Chicago manager for the Edison Storage Battery Co., as sales manager.

AMONG SALES AND PLANT PERSONNEL

TO DISTRIBUTE SANFORDS IN THE SOUTH.

The Sanford Motor Truck Co. has appointed G. M. Knowles its southern division sales manager, with temporary headquarters at Baltimore, Md. Mr. Knowles has had valuable experience and knows the needs of distributors and dealers. During his career in the industry he has handled Packard, Armleder and Acme trucks.

WESTINGHOUSE CHANGES.

Charles V. Doane has been appointed Detroit representative of the Automobile Equipment Department of the Westinghouse Electric & Manufacturing Co. He has been in charge of the Westinghouse automobile service department for the Detroit district and is succeeded by A. B. Junker. His predecessor, L. B. Fijux, has become vice president of the Turner-Moore Co. of Detroit.

NEW BEARCAT PRESIDENT.

P. B. Williams, prominent in the battery business for 10 years and known to automobile and accessory dealers throughout the country, has been named president of the Barco Battery Co., which manufactures and sells the Bearcat storage batteries for automobile starting and lighting. Mr. Williams has been general sales manager of the McLar Battery Co.

LEAVENWORTH PROMOTED.

Ralph W. Leavenworth has been promoted to advertising manager of the Standard Parts Co., Cleveland, from his post as assistant. He succeeds James A. Braden, whose resignation took effect May 1.

GOODYEAR CHANGES.

The Goodyear Tire & Rubber Co., Akron, O., has named L. C. Gates as manager of its sales organization, placed H. E. Waldsmith in charge of its Akron branch and made K. H. Dresser manager of its Newark, N. J., branch.

NEW ACASON DEALERS.

Charles W. Frothingham has become associated with W. T. Taylor under the firm name of Taylor & Frothingham in handling Acason trucks in the Springfield, Mass., territory.

\$100,000 NASH HOME.

Prince Wells is to erect a \$100,000 sales room and garage on Third street, Louisville, Ky., for Nash automobiles and trucks.

NEW SERVICE EXECUTIVE.

The Service Motor Truck Co., Wabash, Ind., has appointed G. J. Eyler sales promotion manager.



J. N. Gunn, President, United States Tire Co., and Vice President, United States Rubber Co.

NASH SALESMEN MEET.

The Nash Motors Co., Kenosha, Wis., recently entertained 250 Nash truck salesmen in a three days' conference at the factory. Addresses were made by Charles B. Voorhis, vice president and general sales manager, and by J. K. McGeough, manager of truck sales. The value of service was stressed and the salesmen were instructed to win the confidence of the buyer at any cost.

CHAMPION KILBANE SELLING MAXWELL TRUCKS.

Johnny Kilbane, American featherweight boxing champion, has been appointed distributor in the West Side of Cleveland for Maxwell trucks and Maxwell and Chalmers cars.



A. L. Ellis, Production Manager, Vulcan Spring Co.

AUTO MAN MAY BE GOVERNOR OF IOWA.

An automobile man, Clyde L. Herring, head of the Herring Motor Co., Des Moines, is to be the Democratic nominee for governor of Iowa. John Rude of the Rude Auto Co., president of the Iowa Motor Trades Bureau, will be a candidate for state auditor on the same ticket. Mr. Herring announces that he will make his campaign solely on the basis of a business administration.

NEW NASH SALESROOMS.

The Nash-Cincinnati Motors Co. will have one of the largest automobile salesrooms in Cincinnati for its wholesale and retail divisions when a building to be erected by a local syndicate at the corner of Reading road and Morgan street is completed. The company will pay \$15,000 a year for a lease of the new building, which will be of concrete and include 30,000 square feet.

WITH KELLY-SPRINGFIELD.

The Kelly-Springfield Motor Truck Co. has engaged Charles and James Ohlmann, who have been with the New York branch of the F-W-D truck, to work on the wholesale distributing end in the New England territory, with headquarters at Boston. Both were formerly attached to the New York and Brooklyn branches of the Kelly-Springfield Truck Co.

H. H. EDGE RESIGNS.

H. H. Edge, for eight years production manager for the Locomobile Co. of America, and for 20 years in the automotive industry, has resigned, effective July 1. He has not disclosed his future plans.

NEW BOSSES AT MONROE.

The Detroit Transportation Truck Co., Monroe, Mich., has named L. M. Smith production manager and C. J. Craven stock department manager. Both were formerly with the Standard Truck Co.

TO SELL TRUCKS ON COAST.

L. M. Field, Inc., has opened extensive offices in Western States Life building, San Francisco and will represent several truck manufacturers on the Pacific coast.

G. M. C. DISTRICT MANAGER.

The General Motors Truck Co. has engaged E. C. Sanner as district manager of retail sales for the southern half of St. Louis.

ENGINEER A SALESMAN.

The Paige Detroit Motor Co., Detroit, has appointed M. W. Reed, engineer in the truck division, a retail salesman.

FINANCIAL FACTS OF THE INDUSTRY

AUTOMOTIVE EQUIPMENT FIRM HAS \$50,000,000 CAPITAL.

The Times Square Automobile Co., with a capital of \$50,000,000, has been formed to engage in the wholesale equipment business and plans branches in every city of the country with a population of over 75,000. The corporation will be one of the largest engaged in the wholesale merchandising of automotive equipment.

Jesse Froelich is president and the directors include Allan A. Ryan of Stutz fame, Hicks Witherbe and C. Crimmins, the latter of whom recently resigned as a director of the Fifth Avenue bank.

25,000 G. M. C. TRUCKS WILL BE PRODUCED IN 1921.

The General Motors Truck Co. at Pontiac, Mich., has begun additions to its plant which will allow a production of 25,000 trucks in 1921. The size of the plant will be doubled. A new machine shop alone will contain 140,000 square feet of floor space. This will be a five-sided building, 357 by 310 by 190 by 245 by 218 feet. Smaller additions include a heating plant and a test house, the latter to adjoin the main factory. A railway siding 1200 feet long will facilitate the receipt of materials.

PIERCE-ARROW REPORT.

For the quarter ending March 31 the Pierce-Arrow Motor Car Co. reports a net profit, after charges and Federal taxes, of \$717,265. This is equal, after deduction of preferred dividends to \$2.07 a share on 250,000 shares of common stock, no par. In the corresponding quarter last year the net earnings were \$567,884, or \$1.47 a share.

NEW INTERNATIONAL CAPITAL.

The International Motor Truck Co. will be provided with \$7,000,000 additional working capital by its plan of issuing a 100 per cent. stock dividend and offering 200 per cent. of new common stock at \$50 per share. Following this new financing the company will have net quick assets of about \$20,000,000, thus fully covering both classes of preferred, and leaving a balance of \$4,000,000.

TRUCK BODIES ADVANCE.

Prices on Fontaine demountable truck bodies were advanced to the following figures on April 10: Model F, \$700; Model F, with power hoist, \$860; Model FA, with power hoist, \$1150; Model FF, with power hoist, \$1300.

LA FRANCE TRUCKS UP.

The Ward La France motor chassis have been advanced to the following prices: Model 2B, 2½ ton, \$3590; model 4A, 3½ ton, \$4490; model 5A, five ton, \$5490.

STUDEBAKER STOCK DIVIDEND OF 33 1/3 PER CENT.

The Studebaker Co., through its directors, declared a stock dividend of 33 1/3 per cent. on its common stock April 7, payable May 5 to stock of record April 19. The new stock will share in the regular quarterly dividend payable June 1 and to be declared soon. This stock dividend means an increase in the common stock from \$45,000,000 to \$60,000,000. The dividend comes out of a surplus of \$28,000,000.

The company's total output for the year is expected to be 80,000 cars, of which 52,000 will come from the Detroit plants and the balance from plants which will be in full operation within a short time. During the first quarter of the year 14,000 cars were manufactured and sold, all these being turned out at Detroit.

INTERNATIONAL ANNOUNCES 100 PER CENT. STOCK DIVIDEND.

The directors of the International Motor Truck Corporation voted on April 7 to declare a stock dividend of 100 per cent. on the common stock, subject to ratification by stockholders. This would increase the common shares outstanding from 70,777 to 141,554. The new stock is to be offered to shareholders at \$50 per share at the rate of one new share for each share now held. This would provide \$7,000,000 in cash to allow the expansion made necessary by rapidly increasing business. The new stock has been underwritten by Hayden, Stone & Co., New York City.

JUMBO PRICES ADVANCE.

The Nelson Motor Truck Co., Saginaw, Mich., which recently included steel cabs in its equipment, on May 1 advanced the prices of Jumbo trucks as follows:

Model	Old Price	New Price
15	\$2595	\$2850
20	2795	3100
25S	3095	3450
25L	3170	3525
30S	3590	3950
30L	3665	4025
35S	4300	4550
35L	4400	4650
40S	4875	5200
40L	4975	5300

U. S. RUBBER REPORT.

The net sales of the United States Rubber Co. for 1919 totaled \$225,589,465, an increase of nearly \$10,000,000 over 1918. The net income, after deducting for depreciation and taxes, was \$21,396,099. After subtracting interest charges the net profits were \$17,730,237. The surplus jumped from \$41,848,051 to \$52,310,163 in the year.

HAWKEYE TRUCK ADVANCES.

The Hawkeye Truck Co. of Sioux City, Ia., has advanced the price of its 1½-ton truck from \$1995 to \$2150.

LARCHMONT CORPORATION HAS \$5,000,000 CAPITAL.

The Larchmont Motors Corporation, a \$5,000,000 Delaware company, has been organized by Walter H. Schimpf, eastern district manager for the truck department of the Paige Motor Car Co., and will manufacture the Larchmont car and a truck yet to be named. The factory will be located near Newark, N. J. It is planned to produce ¾ and 1½ ton trucks during 1921.

A permanent factory building with 400,000 square feet of floor space is to be erected, displacing a temporary factory which allows but 26,000 feet. Joseph Anglada, a well known consulting engineer, will be vice president of the company in charge of engineering and George O. Starr will be assistant to President Schimpf.

\$30,000,000 NEW CAPITAL FOR GENERAL MOTORS.

The General Motors Corporation is planning new financing for the purpose of developing and enlarging its truck and tractor production facilities. It has been reported that the company is endeavoring to secure control of the Pierce-Arrow Motor Co. in order to obtain its truck manufacturing plant. It is also rumored that J. P. Morgan & Co. are to finance the company to the extent of \$30,000. It is understood that representatives of the Morgan interests are to inspect the properties of the concern at an early date.

LOST MONEY MAKING TRUCKS.

The report of the Chicago Pneumatic Tool Co. for 1919 shows net profits of \$657,051 and a surplus of \$489,051 after deducting charges and taxes. President Jackson states that the motor truck department, which was sold early in the year, incurred an annual loss, but would probably have proven profitable if given the proper financial support.

KENTUCKY WAGON REPORT.

The Kentucky Wagon Manufacturing Co., Louisville, Ky., had a net income of \$184,853.71 in 1919. Total assets and liabilities amount to \$3,456,074.20. Considerable money was spent during the year in erecting new buildings to meet the demand for trucks and passenger cars this year. The company bought the business of the Dixie Motor Car Co. early in 1919.

GENERAL ELECTRIC REPORT.

The General Electric Co. made net profits, after all tax and other ordinary deductions, of \$25,077,971 in 1919, about \$8,000,000 more than the previous year. The unfilled orders of the company Dec. 31, 1919, were \$98,880,000 against \$80,000,000 the same date a year ago. Net sales were \$229,979,983. The year 1920 was started with a surplus of \$60,010,245.

TRADE ORGANIZATION ACTIVITIES

NEW JERSEY TRUCK CLUB BACKS TUNNEL PLAN.

The Motor Truck Club of New Jersey is one of the liveliest organizations in the industry and it can always be found backing any movement for the public weal, with truck interests naturally taking precedence. It is now lined up solidly behind the project for a highway that shall lead from the western shore of the Hudson river straight into New York City. Among other moves the club adopted resolutions approving a tunnel with twin tubes of cast iron, lined with concrete and providing two lines of vehicular traffic through each with a roadway 20 feet wide. Copies have been sent to the governors and the legislatures of the two interested states.

N. I. AND V. A. CONVENTION AT ATLANTIC CITY OCT. 20-22.

The 27th annual convention of the National Implement and Vehicle Association will be held at Atlantic City, N. J., Oct. 20-22, instead of the week of Oct. 11, as originally announced. The change was made because of the holding of another convention at Atlantic City during the original period. Headquarters will be at the Hotel Traymore. The large attendance of eastern members anticipated and the many features planned should make the convention the greatest in the history of the association.

WORLD ROAD CONGRESS MAY MEET IN UNITED STATES.

The United States, the only civilized nation not a member of the Permanent International Association of Road Congresses, is at last seeing the light and is likely to join. The Secretary of Agriculture has a recommendation to that effect from the executive committee of the American Association of State Highway Officials. The Roads Congress, an international tribunal for bringing together the best experience and results in highway construction and administration, will probably be asked to meet in the United States.

KANSAS CITY HAS CLUB.

The Kansas City, Mo., Tractor club, organized on April 26 with the election of the following officers: President, G. T. O'Maley; vice president, F. H. Turner; secretary-treasurer, Guy H. Hall; directors, E. J. Anderson, Edwin Downs, R. W. Johnson, W. E. Manning, R. R. Powers.

ONE LICENSE FOR ALL STATES.

A bill is being considered by the Senate Interstate Commerce committee which would provide that an automobile which complies with the registration laws in its own state can travel unrestricted in any state.

SERVICE DIVISION OF N. A. C. OF C. TO HOLD CONVENTION.

The newly created Service Division of the National Automobile Chamber of Commerce will hold a convention at Indianapolis, May 24-26, when a programme for this branch to follow will be laid out and the question of service treated in all its phases. The first two days will be given over to the reading of papers and discussion and on the third day local plants will be visited and their service department studied.

The Service Committee responsible for the convention consists of E. T. Herbig, chairman, Service Motor Truck Co.; H. W. Drew, Packard Motor Car Co.; W. M. Ladd, Pierce-Arrow Motor Car Co.; A. B. Cumner, Autocar Sales & Service Co.; W. M. Britton, Republic Motor Truck Co.; O. T. Hillshafer, Chandler Motor Car Co.; W. B. Riley, Jordan Motor Car Co.

MOTOR CLEAN-UP WEEK.

The Louisiana-Mississippi Automotive Trade association, always up to the minute, is backing a Motor Clean-Up Week in those states to be run in conjunction with Ship-by-Truck Week, May 17-22. Truck owners will be urged to put their old truck in shape as an advertisement for their business, or get a new one. The tractor owner will also be urged to take care of his tractor and the farmer will be shown why he should have one. Passenger car owners will be called on to have their old cars repainted, cleaned and made mechanically perfect, or get a new car.

OPPOSED FREIGHT JUMPS.

The National Automobile Chamber of Commerce, Inc., retained George N. Brown, formerly chief examiner of the Interstate Commerce Commission, to appear before that body at New York, May 3, and oppose cancellation of commodity rates on trucks and automobiles to Pacific coast points. It is proposed to increase both the rate and minimum weight per car.

TRAILER MEN PROTEST.

The Trailer Manufacturers' association voted at its recent meeting in Detroit to contest the recent ruling of the Bureau of Internal Revenue that semi-trailers are taxable as parts of automobile trucks. A determined effort will be made to have the ruling revised.

IOWA DEALERS HAPPY.

The Des Moines Truck Dealers' association recently met and re-elected Harter B. Hull president. The association had its greatest year in 1919, but looks for it to be outdone in 1920.

NEW QUARTERS OF N. A. C. OF C. NOT READY IN MAY.

The new Marlin-Rockwell building, Madison avenue and 46th street, New York City, which was to house the National Automobile Chamber of Commerce beginning May 1, was not ready by that date and the chamber has taken temporary quarters in the Grand Central Palace, Lexington avenue and 46th street. The telephone number remains the same, Murray Hill 5804. The work on the new building was delayed by strikes, but is now being hurried so that the new quarters are certain to be ready not later than July 1.

TRUCK LICENSE FEES CUT IN NEW JERSEY.

The Motor Truck club of New Jersey and assisting dealers have succeeded in having the proposed increase in motor truck licenses, which on heavier trucks amounted to 100 per cent., modified to a surcharge of 20 per cent. on the existing fee for all licenses during 1921. An instance of the money saved truck owners is shown by the fact that the proposed license of trucks 24,001 pounds and over, load, was cut from \$250 to \$70.80. As a result of the agitation the Legislature is planning to pass a uniform motor vehicle law.

TRUCK BODY IN MEMBERSHIP DRIVE.

The Motor Truck Association of America, New York City, is conducting a drive May 11-14 for 2500 new members to add to the 700 now in the association. The prospect list includes owners of two or more trucks in the greater city. This organization has waged an earnest and successful battle against adverse truck legislation.

TAX ON GASOLINE DEALERS.

Manufacturers, dealers and automobile and trucks owners are backing a movement in St. Louis to force gasoline dealers at filling stations to pay a tax of one-half of a cent a gallon levied by the city, the proceeds to be used in repairing the streets.

PURCHASING AGENTS TO MEET.

Under the auspices of the National Automobile Chamber of Commerce, Inc., plans are under way for a convention of purchasing agents to be held in the late May or early June in some central city of the Mid-West.

KENTUCKY TO JOIN N. A. D. A.

Kentucky is making plans to form a state association in connection with the National Automobile Dealers' association.

PLANT EXPANSION MADE AND PLANNED

GENERAL ALUMINUM PURCHASES NEW PLANT.

The General Aluminum & Brass Manufacturing Co., Detroit, has purchased all the stock of the McAdamite Aluminum Co., which, with other expansion plans and changes in personnel, places the company among the largest producers of aluminum castings in the country. The newly bought concern will be operated as a separate unit.

General Sales Manager G. G. Powers announces that J. P. Carritte of the McAdamite Aluminum Co. is now associated with the parent company as a director and member of the executive committee, and that A. P. Slater, formerly superintendent of the aluminum and brass foundries of the Willys-Overland Co. of Cleveland will be assistant general superintendent of the company's foundries, devoting his time for the present to the McAdamite plant.

MINERVA IRON FOUNDRY.

The Minerva Engine Co., Cleveland, has increased its capital stock from \$250,000 to \$1,000,000, and has begun work on a grey iron foundry, the first unit of which will allow 100,000 square feet of floor space and have a daily capacity of 16 tons. An assembling and testing plant is also to be erected. Officers of the company are: President, C. S. Goby; vice president, R. K. Johnson; secretary, L. R. Long.

EISEMANN MAGNETOS IN BULK.

The Eisemann Magneto Corporation, Brooklyn, N. Y., is producing 15,000 magnetos a month and had orders and contracts on hand amounting to \$3,792,679, against \$1,578,438 a year ago. During the first quarter of 1920 the net sales of the corporation amounted to \$1,093,123 and the net earnings \$167,873, the equivalent of over six times the dividend on preferred and about \$20 a share on common.

MORE NAPOLEON EXPANSION.

There seems no end to the activities of the Napoleon Motors Co., Traverse City, which recently added many new factory buildings and is planning to still further increase its manufacturing facilities. Only two years old, this concern has become an extremely active enterprise. The officers attribute its wonderful growth to good advertising and capable selling methods, backed by the reliability of its product.

MILWAUKEE MAKES TRAILERS.

The E. & W. Manufacturing Co., Milwaukee, Wis., has established the first trailer plant in that city. The concern, which has for several years been making units for converting passenger car chassis into motor trucks, is producing trailers in various sizes and styles.

New Federal Factory On 60-Acre Site at Detroit

The Federal Motor Truck Co., Detroit, is looking with optimism on the future of the trucking industry and is making elaborate plans to expand in order to meet the rising demand for its product. The company has purchased a 60 acre tract of land inside the city limits and just outside the "Six-Mile Circle," on which it will erect a mammoth plant.

The site is three blocks west of Grand river and has a frontage of one-half mile on the Detroit Terminal railroad, which will give direct connection with all the railroads in the city. All side tracks will enter factory buildings and loading and unloading will be done inside the plant. In addition to the factory a modern administration building will be erected, which will house restaurant, rest rooms and other modern features. The factory buildings will be of the one-story, saw-tooth type and so arranged that new units may be added at will.

Pending the construction of the new plant the necessary production to meet the present heavy demand will be taken care of at the plant now in operation on Federal avenue, near Junction, by the erection of a new unit between the Michigan Central tracks and Federal avenue, which will give nearly 70,000 square feet of floor space. The company has far outgrown the new building with 75,000 square feet of floor space erected but a year ago.

DORRIS CORPORATION BUSY.

The Dorris Motor Corporation, St. Louis, has booked \$2,000,000 in orders since the first of the year. Separate orders from two St. Louis firms, each for a fleet of eight trucks, is cited by Vice President and General Manager Webster Colburn as an incident of a day's rush of business. One order was from the General Warehousing Co., and the other from the Whistle Co.

MORE CONTINENTAL AXLES.

The Continental Axle Co., Edgerton, Wis., has begun the erection of the second unit of its plant, to be of brick and steel, 60 by 210 feet, and is considering the erection of its own steel, gray iron and malleable foundry. This concern is now turning out 450 truck and trailer axles a month.

G. M. C. SPUR TRACK.

The General Motors Truck Co. plant at Pontiac, Mich., will soon have a 1200-foot spur track of the Grand Trunk railway between its new addition and the warehouse.

WILL DOUBLE PRODUCTION OF APEX TRUCKS.

The Hamilton Motors Co., Grand Haven, Mich., manufacturer of Apex trucks, has increased its capital stock from \$500,000 to \$1,500,000, and will double its present manufacturing facilities to meet the rising demand for its product both here and abroad. The increased capital has been subscribed by Adolf Pricken, prominent real estate operator, who has been elected president. The other officers are: Vice president, Peter Van Zylén; secretary-treasurer and general manager, W. G. Jarman.

Mr. Pricken is a newcomer in the automotive manufacturing field, but has been taught the lesson of the truck through his experiences in connection with his shipping and warehouse operations in New York City, where he is vice president of the Coastwise Warehouses, Inc., and vice president of the Keystone Shipping Co.

MOTO-METER EXPANSION.

The Moto-Meter Co., Inc., Long Island City, N. Y., manufacturer of Boyce Moto-Meters, is preparing to meet the record demand for its product and has purchased the factory it occupies and will immediately install added equipment. It anticipates making a material increase in its present production of 6000 instruments a day.

General Manager Harrison H. Boyce announces that branches will be opened soon in England, France and Canada. At present 160 manufacturers are using this meter against 40 a year ago. Only one-fifth of the product goes to automobile manufacturers, the rest being consumed by the jobbing trade.

MORE STANDARD PRODUCTION.

The Standard Motor Truck Co. expects to soon resume normal production following its being held up by the railroad situation. During April production was cut in half. Since May 1 the concern has been operating on a 40 per cent. power basis to comply with local fuel regulations.

TO TRIPLE PRODUCTION.

Baker-R. & L. Co., Cleveland, O., is planning to triple its production of Baker Industrial trucks and Raulang bodies this year. New manufacturing space has been made available by the recent sale of its electric car business to Rauch & Lang, Inc. of Chicopee Falls, Mass.

ADDITIONAL VIM PLANT.

The Vim Motor Truck Co., Philadelphia, in its attempt to meet the advancing demand for its product, has purchased the Midvale Gun plant in Pittsburgh and will turn the several large fireproof buildings on the 25-acre plant into a truck factory.

AND NEW PRODUCTIONS PROJECTED

COMMERCE TRUCKS WILL BE BUILT IN CANADA.

The Commerce Motor Car Co., Detroit, is to establish a Canadian plant and for this purpose has formed the Commerce Motor Truck, Ltd., at Guelph, Ont., with capital stock of \$1,500,000. The new plant, a group of one-story buildings with separate office building, will be in operation by October. Between 5000 and 6000 trucks will be produced the first year. The American concern plans to turn over to the Canadian company an English order for \$1,000,000 worth of one-ton and two-ton Commerce trucks, in which the Canadian plant will specialize. The mayor of Guelph will be secretary and treasurer. The other principal offices will be held by officials of the American branch, with the exception of the directors, among whom are several members of the Guelph Chamber of Commerce.

HERCULES COMPANY PURCHASES COMPLETE FOUNDRY.

The Hercules Motor Manufacturing Co. of Canton, O., has purchased a complete foundry to ensure a supply of grey iron castings. The foundry will be known as the Motor Castings Co. and has a capacity of 65 tons of finished castings a day, half of the requirements. The company which will be a separate corporation, subsidiary to the Hercules Motor Manufacturing Co., is capitalized at \$500,000.

The officers are: President, R. W. Gallagher; vice president, Charles Balough; secretary and treasurer, George W. Russell; directors, the officers and H. H. Timkin, Gordon W. Mather, J. G. Obermier, Rathburn Fuller and Austin Lynch.

\$700,000 FOREIGN ORDER FOR GRAY & DAVIS, INC.

Gray & Davis, Inc., Boston, Mass., has received a \$700,000 order for a wide variety of its product from its French associate, the Eyquem Co., which is equivalent to more than 15 per cent. of its turnover in 1919. This is expected to be the first of a series of big orders from foreign makers. The company has also just closed the largest contract it has ever signed for starting and lighting systems, this being with one of the big Middle Western manufacturers of low priced cars.

THOMART ¾-TON TRUCKS.

The Thomart Motor Co., recently formed by a group of Akron, O., business men, will specialize in the production of a ¾-ton truck, known as the Thomart. It will have a speed of from 30 to 35 miles an hour. The company will do its manufacturing in the plant of the Seneca Chain Co., recently purchased. The word Thomart is derived from sections of the names of the president, William G. Thompson, and its vice president, James L. Stewart.

G. M. C. TO DOUBLE SIZE OF TRUCK PLANT.

Work has been begun at the plant of the General Motor Truck Co. at Pontiac, Mich., which will increase its production capacity to 25,000 trucks in 1921. When these are completed the factory will cover more than 10 acres. One of the buildings will be pentagon shape, with sides 357, 310, 190, 345 and 218 feet respectively, and will have 140,000 square feet of floor space. This will be used for a machine shop.

On the south side of the building will be a railroad siding 1200 feet long, which will facilitate the receipt of materials. Among the other buildings to be erected will be a heating plant and an addition to the main factory that will be used as a testing house.

THE WHEELLESS TRAILER.

The Wheelless Trailer Co. has been formed in Stanley, Wis., with a capital stock of \$25,000, and has secured a factory which will be re-equipped and remodeled to turn out a new type of trailer designed by O. W. Henderson, who has been turning them out on a small scale for several months.

The wheelless trailer is a rack-like affair which can be attached or detached from the rear of a truck or passenger car to carry about 500 pounds of additional freight, such as milk cans, trunks, bags and other luggage.

ADDITION TO OSHKOSH FACTORY.

The longest building at Oshkosh, Wis., will soon house the building of Oshkosh four-wheel driven trucks. The structure will be 450 feet long by 130 feet wide, of saw tooth construction. Another building, 100 by 75 feet, is being erected for the same concern. Both are due to be completed by about Aug. 1. Around the plant is a tract of 35 acres where a testing track will be installed for the usual 100-mile road testing that is given Oshkosh trucks after final assembly.

FREEMAN CLEVELAND PLANT.

The Freeman Motor Co., Omaha, Neb., will build a large plant in Cleveland in the fall and for the intervening period has leased assembly room space in the Whitney Power block, Power avenue, Cleveland, where it is proposed to assemble 500 trucks and about 50 passenger cars this year. The officers of the company are: President, H. O. Stonebreaker; vice president, Paul Reiff; secretary and treasurer, George H. Reiff; general manager, F. L. Freeman.

COMMERCIAL TRUCK EXPANSION.

The Commercial Truck Co. of America, Philadelphia, plans to jump its production five-fold and to allow for the necessary expansion has increased its capital to \$4,000,000.

NEW FRANKLIN TRUCK WILL BE LIGHT AND ECONOMICAL.

The H. H. Franklin Manufacturing Co., Syracuse, N. Y., is putting the finishing touches on a one-ton truck which will be on the market soon. It is claimed to be from 1000 to 2500 pounds lighter than the average one-tonner and to be unusually economical in the use of gasoline. It will be governed to a speed of from 25 to 30 miles an hour, having pneumatic tire equipment. A series of bodies will be offered with the new truck.

The schedule of production calls for 1000 trucks the first year and 25,000 by the end of 1924, when it is expected that from 5000 to 8000 employees will be required for its manufacture. The truck will have a newly designed and powerful four-cylinder, air-cooled engine, with unit power plant construction and spiral bevel gear final drive.

CONSOLIDATE DEPARTMENTS OF COVERT GEAR CO.

In order to centralize administration and thus better care for its rapidly expanding business, the Covert Gear Co., Inc., through President Alwin A. Gloetzer, has consolidated all the company's departments, including sales, service and engineering, at its manufacturing headquarters, Lockport, N. Y., where recent factory additions allow for their housing.

R. C. Merchant, sales manager, has already removed his headquarters from Detroit to Lockport, although the Detroit headquarters will be continued in co-operation with the Lowney and Carmichael Sales Co.

NEW AVERY ONE-TON TRUCK.

The Avery Co. has acquired the buildings of the Bartholomew Co., Peoria Heights, Peoria, Ill., where Glide automobiles have been built, and will use it as a site for truck production, including a new one-ton truck to be brought out the latter part of the year. This truck will be designed especially to meet the hauling demands of farmers and industrial firms.

TO MAKE NEW FRONT DRIVE.

G. J. Hoskins, multi-millionaire manufacturer of Sydney, New South Wales, founder of the G. & C. Hoskin Iron Works, is in America with his sons, L. P. and E. J. Hoskins, to start manufacturing the George J. Hoskins Australian Front Drive. They will manufacture a car at Los Angeles, fitted with the new front drive, which is a self-centered, co-ordinated radio spherical gear.

LA FRANCE COMPANY BUSY.

The American-La France Fire Engine Co. reports \$220,948 profit in the first three months of 1920 before allowing for income and excess profits taxes.

Trucking Corporation Has 1817 Vehicles In Its Service

The United States Trucking Corporation, the unit brought into being by the merger of 28 independent trucking concerns, is now in actual operation in New York city and has 260 motor trucks, most of them from five to seven-ton capacity, and 1557 horse drawn vehicles in service. The corporation occupies two floors of offices at 393 Canal street and employs nearly 5000 people. It specializes in handling structural steel and other building supplies and it is estimated that the concern hauls 95 per cent. of the structural steel used in its territory.

The metropolitan district is divided into five zones for operating purposes, each in charge of a manager. The latter makes a requisition each night for the number of vehicles he will need the following day and should his motive power be insufficient he gets in touch with one or more of the other managers. If he gets more trucks than he can use he also notifies the other managers and supplies those in need. Nearly all of the concern's business is within a radius of 20 miles.

An equipment manager is also on the job to see that the vehicles are kept in motion and the best results obtained. A foreman is stationed at each railroad freight terminal and dock to look after the company's interests. The stables and garages of the 28 concerns in the merger will be consolidated as rapidly as possible. Of the five zones under the respective managers two are on Manhattan Island, one in Brooklyn, one in Hoboken and one in Newark.

FRANCE BANS AUTO IMPORTS.

The French government has prohibited the importation of automobiles. This country shipped 22 trucks to France in January and 80 in February.

TRUCKS THE BIGGEST FACTOR IN DEVELOPING OIL FIELDS.

G. A. Kissell, president of the Kissel Motor Car Co., credits the motor truck with being the leading factor in opening up the oil districts in Texas and Oklahoma. Mr. Kissell says:

"The formation of trucking lines which penetrated sections of the country heretofore thought unpenetrable, have brought in their wake pioneers, settlers and prospectors, whose activities in the newly opened district have resulted in towns springing up over night.

"When the history of the oil fields in the United States is written the motor truck will be given its just credit for having been the means of increasing the country's crude oil supply through its dependable and economical transportation."

RENSSELAER COUNTY USING GOV. ERNMENT TRUCKS.

Rensselaer county, New York, was among the first districts to get trucks allotted by the state for use in highway work. This county got six of these vehicles, four three-tonners and two two-tonners. These trucks were originally for government use and are among the many left from war orders now being distributed to the states. Two of the 14 towns in Rensselaer county have trucks for highway purposes. The communities taking them will pay the expenses of transportation, make necessary repairs, provide for their upkeep and furnish drivers.

THE TRUCK'S FUTURE.

Results of good road building on the Pacific coast is pointed to by H. F. Harris, president of the Bethlehem Motors Corporation, Allentown, Pa., to show that all America needs to put the motor truck industry far ahead of the passenger car industry is good roads in every state. Permanent highways throughout the nation will create a market for millions of trucks, he contends.

Gasoline Takes New Jump and Limit Not Reached

The Standard Oil Co. of New York advanced on May 11 the wholesale price of gasoline from 28½ cents to 30 cents a gallon. This will make the retail price in general 34 cents, although a number of garages in New York and elsewhere are charging as high as 37 cents.

This latest increase represents an advance in the retail price from 27 and 28 cents of a year ago. An advance of six cents has been recorded in three increases since the first of the year. Some independent concerns are reported to be now quoting gasoline as high as 32 cents wholesale.

The crude oil shortage and steadily increasing prices for that product in the market are considered to be among the chief causes for the advance. At the National Petroleum Congress in March a price of 40 cents before the end of the year was freely forecasted and many voiced the opinion that the figure would be 50 cents. It is not improbable that a still further advance is not far away.

Abroad the price of gasoline is much greater than in this country, being three and four times more in several countries. There is a storm of protest in England over a recent increase which put the price at between 90 and 95 cents.

The Bureau of Mines at Washington gave timely warning of a shortage of motor fuel before the end of the summer due to the inability of oil producers to supply the demand and the tremendous increase in motor car use. Over 7,500,000 automobiles are being operated today, an increase of 25 per cent. in the last year. The increase in gasoline production has not reached proportionate figures.

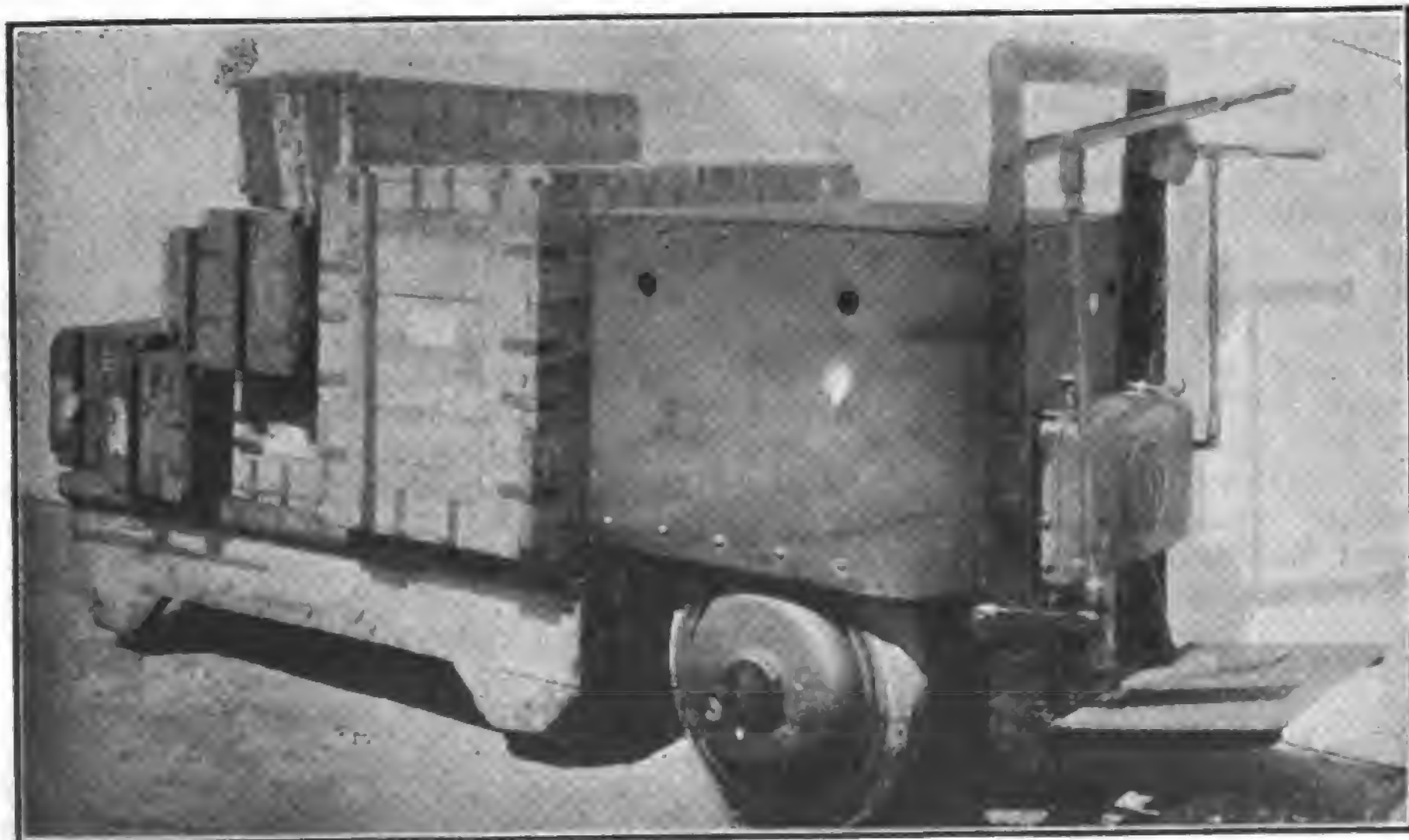
Any increase of Mexican production will not affect the price of petroleum products in this country this summer. Drilling is progressing rapidly in Mexico and the revolution has not thus far interfered with production in any way, which indicates that this field may later save the situation.

Prices on virtually all oil products continue to rise in various sections of the country, based on an extension of the long sustained demand. These include all grades of crude and refined products, together with oil by-products.

The Standard Oil Co. of New York earned \$57.52 in 1919 on its capital stock against \$38.19 the previous year, and the Standard Oil Co. of New Jersey earned \$76.43 on its common compared to \$58.89 in 1918.

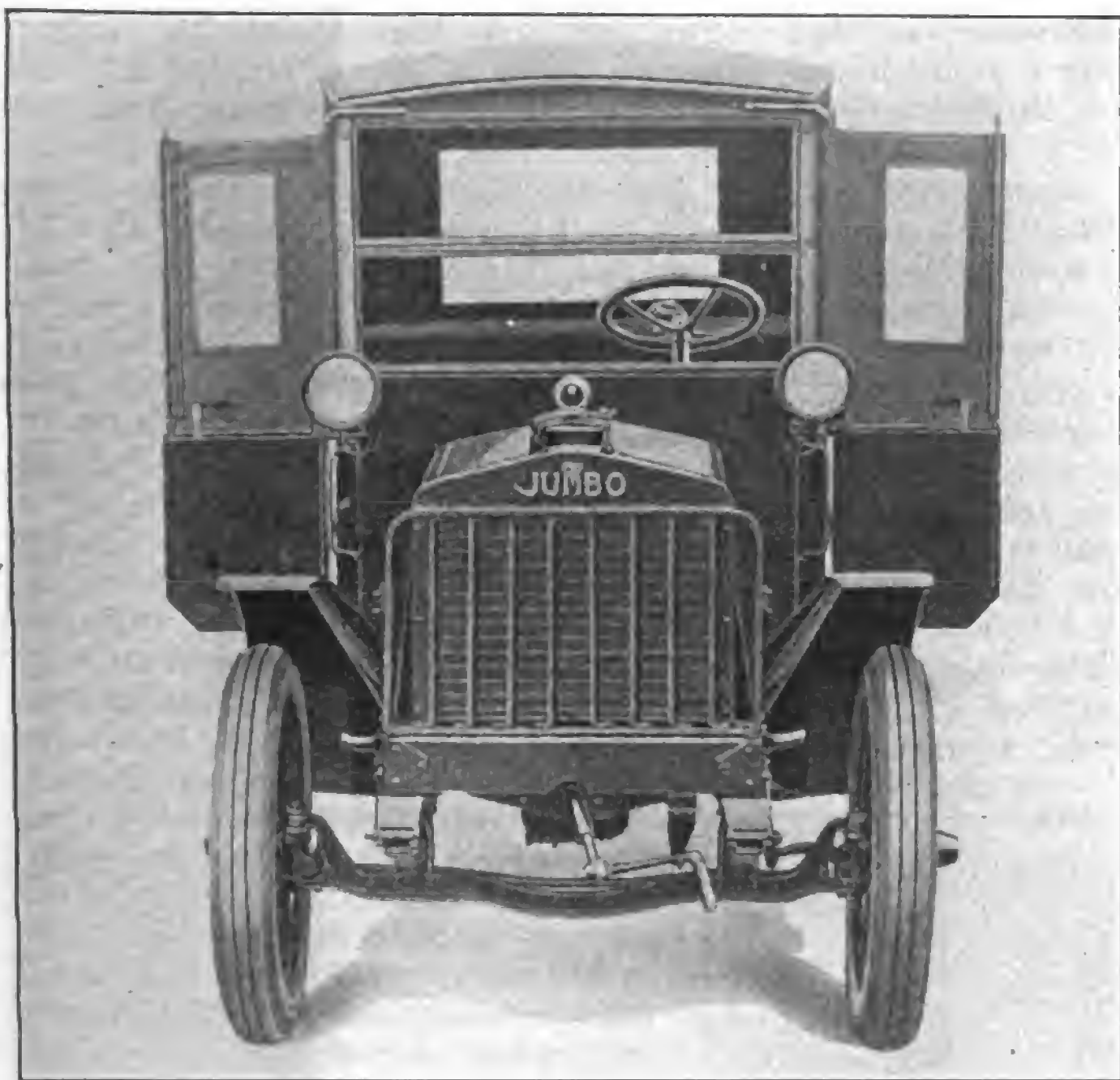
PRICES DO NOT PHASE BUYERS.

That higher prices do not phase truck buyers is shown by the experience of the Acason Motor Truck Co., Detroit, which had a customer cancel his order for six 1919 trucks in favor of six of the 1920 models at an advance of \$1000 each.



A Hunt Electric Industrial Truck Used at One of the New York City Terminals of a Railroad for Transfer of Baggage.

JUMBO HIGHWAY EXPRESS TRUCK



The Forward End of the Highway Express Jumbo Truck, Showing the Radiator Guard and Shutter, the Special Radiator and Its Fittings, and the All-Steel Cab with the Open Curtained Doors.

DESIGNATED as the Highway Express model, a 4000-pound load capacity Jumbo truck is now being produced by the Nelson Motor Truck Co., Saginaw, Mich., which is a development of the model 20, which it succeeds. This machine has been redesigned so that with pneumatic tire equipment it may be driven at maximum speed of 25 miles an hour, and it is maintained that with such tires it will have even greater endurance than the model 20.

In developing the chassis a number of the constructional features of the other Jumbo machines were incorporated in it, and the result is claimed to be extremely satisfactory from any point of view. The company's engineers believe that with trucks of this capacity an essential quality is speed, and as this can only be practically obtained with pneumatic tires, such changes were made as were necessary to insure structural strength to endure under the largely increased stresses.

The wheelbase of the chassis is 144½ inches and the tread is standard. The length of the main frame back of the driver's seat is 120 inches, and the body can be whatever is desired in excess of this.

Engine the Latest Buda.

The engine is the latest type Buda, designed especially for truck service. It is a four-cylinder, water cooled, vertical, L-head type, having cylinder bore of 3¾ inches and stroke of 5¼ inches, that is rated by the S. A. E. formula at 22.50 horsepower, but will, the builder claims, produce in excess of 30 horsepower.

The cylinders are cast en bloc with the water jacket integral, the head being a separate casting. The cylinder block is designed with large water cham-

bers and the head is so formed that there is a concentration of the water flow across the heads of the combustion chambers. The head is retained by a series of heavy studs. The water outlet in the cylinder head is fitted with an adjustable elbow that may be placed in four different positions.

The pistons are cast from the same material as the cylinders and are turned and channelled for three eccentric rings above the wristpins and for one wiper ring at the bottoms of the skirts to insure thorough distribution of oil and prevent leakage from the combustion chambers to the

crankcase. The pistons are ribbed to have the largest effective cooling area and great care is taken to obtain exact alignment of the wristpin bores. Each piston has a balancing pad so that each may be machined to given weight and to balance.

Special Type Crankcase.

The crankcase is iron, cast in two sections, the upper half being divided by a vertical transverse web that carries the main bearing, and there are forward extensions that house the timing gearset and form the upper half of the flywheel bell housing. The lower half of the flywheel case is a separate casting. The

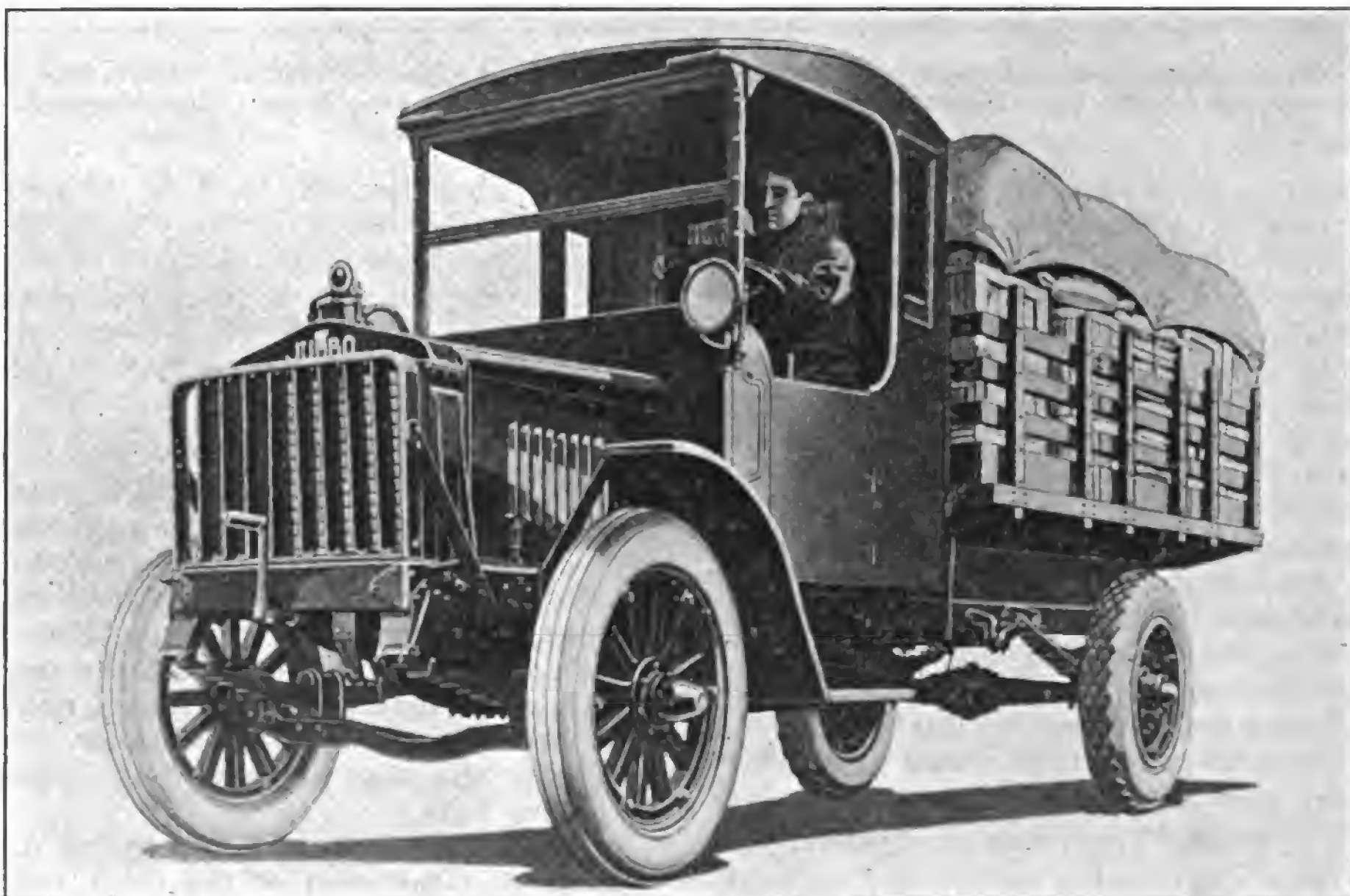
lower section of the crankcase is designed to be removable without dismantling the timing gearset or flywheel housing. The casting is deep and there is a central plate that is the base for the oil pump, which contains a drainage plug. The section is divided horizontally by a readily removable plate that is the top of the oil reservoir and the bottom of the crank chamber.

The crankshaft is drop forged from open hearth steel with the flywheel flange integral. It is a three-journal type. It is machined, heat treated, ground and balanced and is drilled for pressure lubrication. The camshaft is drop forged from similar material with the cams and the timing gear flange integral. This is machined and case hardened, and the faces of the cams and the large journals are ground on special machines. The timing gears are helical cut, are large diameter, have wide faces, and five are used, one of these for the generator.

Connecting Rods, Bearings and Valves.

The connecting rods are chrome vanadium steel I section drop forging that are heat treated. The wristpins are large steel tube, hardened and ground, and are secured in the piston bosses by two-diameter lock screws that extend through both walls of the tube and by spring retainers expanded in grooves turned in each end of the piston bosses. The main and crankpin bearings are babbitt metal in bronze cages, the connecting rod caps being retained by four alloy steel heat treated bolts. These bearings are adjustable with shims. The three camshaft bearings are die cast babbitt metal and the connecting rods oscillate on the wristpins on phosphor bronze bushings.

The valves are a poppet type fitted in long removable guides and are actuated by barrel-type, self-centering springs. The valve springs and spring cups are



Highway Express Jumbo Truck Chassis Equipped with All-Steel Cab and a Stake Platform and Pneumatic Tires, Having Maximum Speed of 25 Miles an Hour.

secured by split type retainers. The valve tappets are a mushroom type, operating in large renewable guides, and these are fitted with adjusting screws and lock nuts.

Lubricating and Cooling Systems.

The engine is lubricated by a full pressure system. The oil is drawn through a large screen surrounding the pump intake and is forced by a gear pump driven by the camshaft through a seamless steel tube manifold, cast in the upper section of the crankcase, to the main and camshaft bearings and timing gearset. From the main bearings the lubricant is forced through the drilled crankshaft to the crankpins. The oil thrown from the crankpins is distributed to the cylinder and piston walls, the wristpins, the cams, tappets and valves. The drainage to the base of the crankcase and to the reservoir. The oil pump is secured to the upper section of the crankcase and the oil filter may be removed or the sediment chamber drained at convenience.

The engine is cooled by a circulation of water through the cylinder jackets and a radiator with cast top and bottom

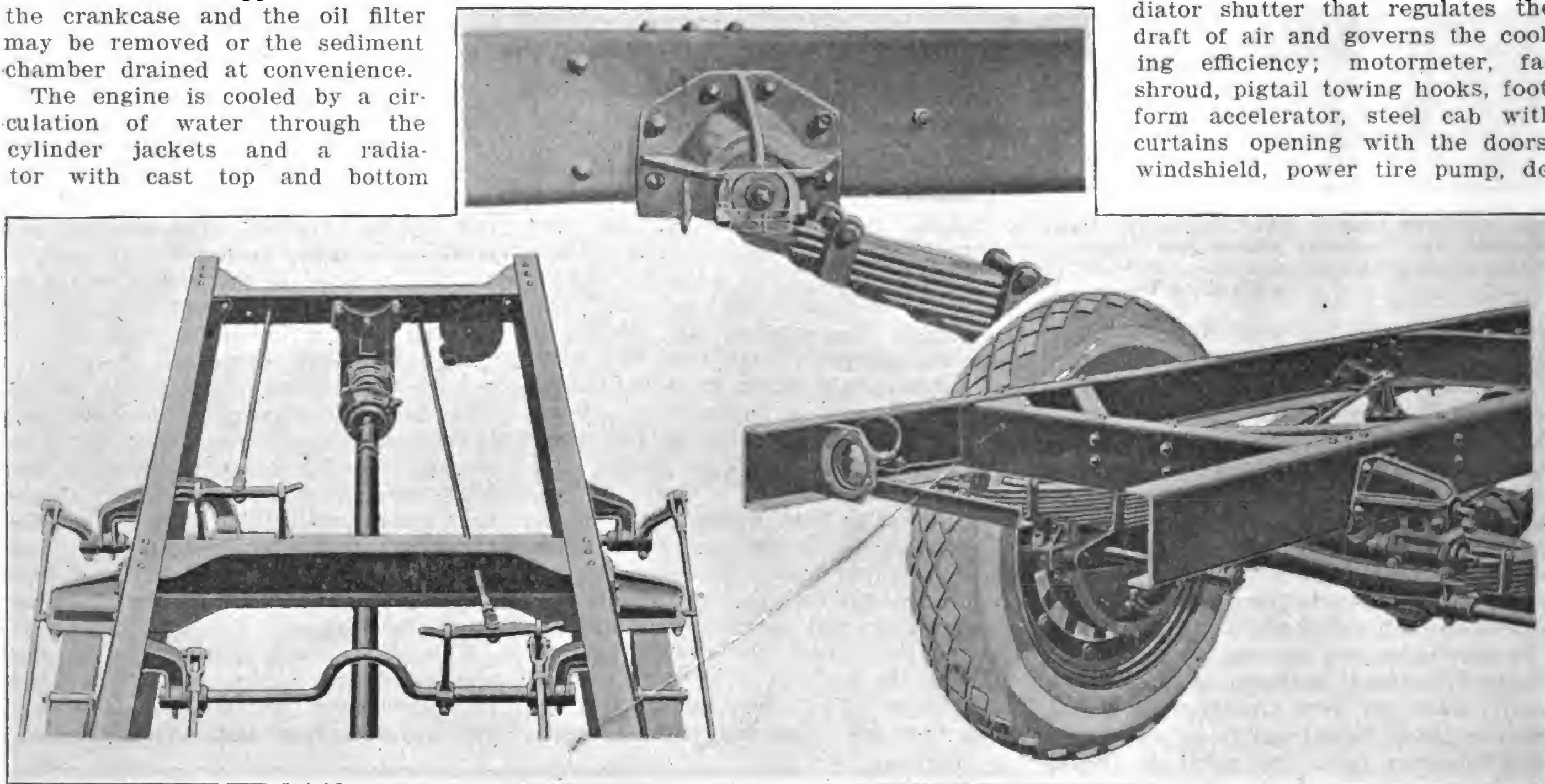
sis frame that it has an inclination of two minutes and 20 degrees from horizontal, so that when the chassis is freighted to capacity the driving shaft is in alignment with the engine crankshaft, this obviating power loss through shaft angularity. The clutch is a multiple dry disc type that is self-compensating for wear and requires practically no attention, and the gearset is a selective sliding gear construction having three forward speed ratios and reverse.

The drive is through a large tubular shaft and two Arvac universal joints, which is coupled to the pinion shaft of the Clark internal gear driven rear axle, the dead axle carrying the load and the power being transmitted through the countershaft to the gears, which are bolted to the wheels and are completely enclosed. The front axle is a Columbia unit, a steel drop forging, with heavy

and load can be safely carried and the machine driven until replacement is made.

The control is conventional, the steering gear being a Jacox, located at the left side, with unusually heavy linkage. The machine is driven by foot pedals for the clutch and service brake, hand levers on the steering column for the ignition and throttle regulation, and gear changing and emergency brake levers in the center of the footboard. The service brake is external contracting and the emergency brake internal expanding on and in drums on the rear wheels enclosing the internal gears.

The equipment of the chassis is extremely complete. It includes generator, electric head and tail lamps, the tail lamp being set flush with the frame to insure against breakage; starting motor, electric horn, storage battery, hub odometer, heavy radiator guard, radiator shutter that regulates the draft of air and governs the cooling efficiency; motormeter, fan shroud, pigtail towing hooks, foot-form accelerator, steel cab with curtains opening with the doors, windshield, power tire pump, de-



Some Constructional Details of the Jumbo Highway Express Chassis: Above, the Double-Wrapped Forward Eyes of the Rear Springs; Left, the Central Section of the Frame, Showing the Brake Equalizers; Right, the Rear End of the Frame and the Inset Electric Tail Lamp.

tanks and a tubular cooling section, forced by a centrifugal pump having a bronze impeller. The packing glands have large bronze sleeves that fit over the shaft and prevent rusting and pitting. The assembly can be removed as a unit or the pump and the shaft may be taken out separately. Radiation is promoted by a large fan mounted in a bracket support cast integral with the timing gear case cover, that is driven by a flat belt from a pulley on the forward extension of the pump shaft.

The source of the ignition current is an Eisemann high-tension magneto with manual control, and the fuel is supplied from a 20-gallon tank under the driver's seat to a Zenith carburetor.

Power Transmission System.

The combination clutch and transmission gearset unit is a Fuller construction and it is assembled with the engine, the power plant being so located in the chas-

steering knuckles, that is heat treated. The wheels are wood, artillery type, the forward set shod with 35 by five inch and the rear set with 38 by seven pneumatic tires. The front wheels are equipped with Bock and the rear wheels with Hyatt roller bearings.

Frame, Springs and Control.

The frame is a semi-flexible type, strongly constructed with cross members that are reinforced with gussets, and it is suspended on Perfection semi-elliptic springs, the forward set being 40 inches length and 2¼ inches wide and the rear set 52 inches length and 2½ inches wide. The driving and braking stresses are taken by the rear springs, there being no radius rods.

One of the features of the spring design is that the eyes of the front ends of the rear springs are double-wrapped, by the master and first leaves, so that in the event of the master leaf the frame

mountable rims, cord pneumatic tires, front fenders, running boards, jack, tool kit and Alemite grease gun. The chassis is lubricated by the Alemite system of greasing under pressure that may be 500 pounds maximum. The transmission gearset is equipped with a power take-off for operating the tire pump and which may be used for operating a light winch or a body hoist.

RAILROAD MAN PAYS TRIBUTE TO TRUCKS.

W. G. Besler, president of the Central Railroad of New Jersey, is one railroad official who does not hesitate to give motor truck transportation the credit which is its due. In a letter to the National Automobile Chamber of Commerce, Inc., he declares that for short hauls trucks are best and should be widely utilized as an adjunct to railroad service.

NOTES OF INDUSTRIAL PROGRESS

INDIANA TRUCK PLANT PROVIDES PARK FOR EMPLOYEES.

The Indiana Truck Corporation, Marion, Ind., which has just completed erection of a large addition to its plant, the new building being necessitated by rapidly mounting demands, has shown its interest in the welfare of its employees by the decision to lay out an ideal pleasure park near its factory to be known as Indiana park. The grounds will also be open to the public.

This company's sales in January and February were more than 300 per cent. above the corresponding months in 1919.

G. M. C. EMPLOYEES' FUND.

The General Motors Corporation reports the unqualified success of its operation of an employees' savings and investment fund. In the part of 1919 that the plan was in effect 33,641 employees deposited \$2,250,000. In the five years to Dec. 31, 1924, the company will match these savings dollar for dollar and credit interest semi-annually at the rate of six per cent. An employee is allowed to deposit up to 10 per cent. of his annual wage, not to exceed \$300 yearly.

WORKERS AID PRODUCTION.

So seldom are workers willing to cooperate to increase production that the recent action of 4000 men and women employees of the Remy electric division of the General Motors Corp. at Anderson, Ind., is refreshing. The workers will take only the necessary time off for lunch and will receive full pay for the noon hour.

England and Canada Take \$36,000,000 GMC Common

The General Motors Corporation is to issue \$36,000,000 additional common stock to be sold to British and Canadian interests. The Explosives Trades, Ltd., of London, England, of which Sir Harry MacGowan is chairman of the board, and the Canadian Explosives, Ltd., of Montreal, are jointly interested in the purchase. They have secured rights which make possible an interest in the common stock amounting to \$36,000,000, which will be taken by the two companies as a permanent investment. The present common capitalization is approximately \$148,000,000. Authorized common capitalization now in the treasury will care for the anticipated sale.

President W. C. Durant and all the other officers of the General Motors Corporation were re-elected at a meeting of the directors May 13. De Witt Page of the New Departure Manufacturing Co. of Bristol, Conn., and T. W. Warner of Toledo were added to the executive committee. All of the factory units are operating at better than 75 per cent. of capacity and some far in excess of that figure. The new interests will result in big development of the business in Great Britain and Canada.

TRUCKS FOR OIL FIELDS.

Special exhibits of trucks and cars adaptable in the oil fields were made at Fort Worth, Tex., April 12-17. Well over 120 trucks and cars were shown.

"VOCATIONAL SELLING PLAN" FOR MOTOR TRUCKS.

The Kelly-Springfield Motor Truck Co., Springfield, O., has devised a new selling proposition under the title of the "Vocational Selling Plan." Under this plan 177 different business fields have been classified, each treated individually, and the proper unit recommended for each case. The company's 15 years study of transportation equipment is therefore at the command of each prospect, who will be shown the many ways in which his business can be improved and expanded by use of the motor truck.

TO TURN 3000 ARMY MOTOR EXPERTS LOOSE.

Within the next three months 3000 men will be discharged from the United States Motor Transport Corps, a large number of whom have received special instruction at the Motor Transport training school. Information as to the experience and qualifications of individual men will be furnished at the office of the Chief of the Motor Transport Corps at Washington.

REPUBLIC ECONOMY RUN.

Carrying 50 boxes of oranges, weight 2½ tons, a model 11 Republic truck recently brought its load from the Alhambra-San Gabriel chapter of the Red Cross to the maimed and helpless heroes in the Letterman hospital at the Presidio, San Francisco, a distance of 486 miles, on an average of 14½ miles to the gallon of gasoline and 180 miles to the gallon of oil.

SHOWS HELD AND PROJECTED

RECORD EXHIBITION OF MOTOR TRUCKS IN CANADA.

The largest exhibition of motor trucks ever made on a single floor in Canada was presented at the Hamilton, Ont., show, which closed April 24, and which ranked second only to the annual national motor show at Toronto. It was the first held in that city since 1914, but the city will be the scene of an annual display hereafter. Hundreds of applications for space were turned down. The event was a pronounced success from every angle.

ST. LOUIS TO HAVE HALL FOR AUTOMOBILE SHOW.

Speakers booming a proposed \$24,000,000 bond issue in St. Louis were supplied motor cars by the trade, there being two items in the proposed issue that appeals to all in the automotive industry. One deals with street improvements and the other provides for an auditorium or convention hall. The latter would adequately house an automobile show and is badly needed in St. Louis.

OKLAHOMA CITY SHOW HELD IN NEW COLISEUM.

The fourth annual automobile show of the Oklahoma City Car Dealers' association, which opened in that city March 22, was a winner from every standpoint. Both trucks and passenger cars were shown in quantity and it was the unanimous opinion that the policy of exhibiting these together is more advantageous than separate shows.

The event was held in the new Coliseum and the surroundings were particularly picturesque. A notable feature was the number of special body jobs on both passenger car and truck chassis. Accessories and garage equipment were also shown to advantage.

BROOKLYN BUS LINES ILLEGAL COURT HOLDS.

The Appellate Division of the Supreme Court in Brooklyn on May 10 affirmed in a unanimous opinion a court decision that the operation of the existing bus lines is illegal. The city will endeavor to take the matter further.

DETROIT DEALERS OPPOSED TO SEPARATE TRUCK SHOW.

The Detroit Automobile Dealers' association truck division held a meeting early this month at which it was unanimously voted to exhibit trucks in connection with passenger cars at the annual show. The success of the truck department of the Detroit show and the reported losses through the separate truck displays at the New York and Chicago shows were cited during the discussion of the subject.

COMBINED AUTOMOBILE AND FASHION SHOW.

A combined auto and fashion show given at Albany, Ala., last month under the management of the Malone Coal, Grain and Motor Co., distributor of International trucks and several passenger cars, was a triumphant success. Over 200 different cars and trucks were on display. Four orchestras furnished music and there were special entertainments and banquets, the entire event being carried out on a holiday scale.

ROAD CONSTRUCTION PROJECTS

Camera Proves Tires Protects Trucks from Impact

Tests recently conducted by experts of the Goodyear Tire & Rubber Co. have just been confirmed by the experiments of Chief Engineer A. F. Masury of the International Motor Co. who, by means of "slow" moving pictures, has been able to record photographically the comparative road impact and chassis shock of motor trucks shod with pneumatic or solid tires. With the new type of camera exposures are made at the rate of 160 instead of 16 a second and then projected at 1/10 normal speed.

Two trucks of similar design were used, one with the pneumatics on front and solids on the rear, the other equipped with pneumatics all around. Both were run at a speed of from 15 to 18 miles an hour along a straight stretch and over a sharp incline that caused them to spring into the air and strike ground as from a vertical drop of from two to three feet. Newly invented timing and impact registering devices, attached to the camera lens operated simultaneously.

The solid tired truck, although 620 pounds lighter, struck ground with a force of 14,336 pounds as compared to the impact of 4624 pounds for the heavier pneumatic tired vehicle. The lighter impact of the pneumatically shod truck was found due to the extra cushioning of the pneumatic tires. The solid tires showed a deflection of but one inch as compared to 4¼ inches deflection shown by the pneumatics.

The photographic record disclosed that the pneumatic tires absorbed most of the shock of the vertical drop, the truck leaving the ground only slightly, while the solid tired truck bounded high after the impact. The recording device showed that the pneumatically equipped truck hit the ground less than two-thirds as hard as the other, greatly lessening strain on the chassis.

Results from these unique "movie" tests indicate that a 7½-ton truck on pneumatic tires would wear roads less than a five-ton truck operating at the same speed and under the same rough road conditions.

GOOD ROADS AND TRUCKS TO BEAT RAILROAD STRIKES.

The construction of good roads in order to encourage the building of a motor transportation service that can supply the nation's needs when the railroad men decide to pull another strike is one of the suggestions rising out of the recent tie up. Senator Townsend, author of the Townsend National Highway act, and Governor John J. Cornwell of West Virginia, which state proposes to spend \$50,000,000 for good roads, are among the first to give impetus to the idea.

NEW HIGHWAY ROUTE BETWEEN BUFFALO AND ALBANY.

A new state highway route between Buffalo and Albany to be known as the Empire State Turnpike has been laid out by Commissioner of Highways Frederick Stuart Greene that will connect the Great Lakes with the Atlantic Seaboard at Boston and will be about 25 miles shorter than the present highway. The new route will meet the demands of farmers and motorists. It passes through the fruit belt in the western part of the state and avoids a number of cities. With parallel routes between the two cities repairs can be made in alternate seasons and one route or the other will always be open.

GREATER KANSAS CITY IN FIGHT FOR GOOD ROADS.

The Good Roads association of Greater Kansas City is to get the sturdiest kind of backing from the chambers of commerce of Kansas City, Mo., and Kansas City, Kan., which are to raise \$100,000 to carry out the association's programme. About \$40,000 of this will be devoted to aiding the passage in the two states of constitutional amendments for large bond issues. The balance will be used for specific repairs, marking of highways, maintenance of a news bureau and the issuance of maps and literature on roads and their uses.

CAMERA SHOWS TIRE JARS.

On April 30, M. C. Horine of the International Motor Co. will repeat before the Detroit section of the S. A. E. an illustrated address on "Tire Deflection and Unsprung Weight in Trucks," which excited unusual interest at the April 8 meeting of the Metropolitan Section. A high speed camera shows the actual results of heavy jars and vibrations to both pneumatic and solid tires.

BOULEVARDS IN FLORIDA.

Florida will have a total fund from government and state sources of \$6,000,000 for good roads and it is planned to connect every county seat in the state with a good road and the main highways, east, west, north and south, will be boulevards that will be a credit to the state. There will be unbroken lines of paved highways to every corner of the state.

BETTER ROADS IN CALIFORNIA.

California has already expended \$26,635,690.19 out of the money raised from the two first bond issues, 2389 miles of highway being completed or under contract.

John B. Page has resigned as foreign sales manager of the Traffic Co. and is now associated with the Oklahoma Automobile Manufacturing Co.

National Highways Plan Advocated by Farmers

An informal referendum by the American Farm Bureau Federation, which has local organizations in 28 states, shows that the members of that body, like those of the National Grange, favor a national highway law.

Reports are still coming in, but the referendum is nearly completed and the responses of the farmers are practically unanimous for a system of highways, directed, constructed and maintained by the government.

Many of these farmers expressed the opinion that the shifting of the job of looking after the main highways from the shoulders of state and county commissioners would mean that the work of building farm to market roads would be speeded up.

WANTS NATIONAL HIGHWAYS TO BE ELECTRICALLY LIGHTED.

Attorney General Mitchell Palmer (the A being left off advisedly), not only is out for a national system of highways, but he wants the nation wide stretch of highways to be electrically lighted. In this connection he says: "Lighted highways will have a doubled carrying value, and will bring power, light and heat to the farmer's front door. We have the power waiting in our rivers whose latent usefulness for transportation has been too long neglected."

\$50,000,000 FOR 'GOOD ROADS' IN WEST VIRGINIA.

West Virginia will vote on a \$50,000,000 bond issue for the construction of hard roads in that state this coming November, and indications are that the plan will be favorably acted upon by the people of that state. The bonds will be retired in 30 years. Fees for automobile and truck registrations will be used to maintain the roads.

NATIONAL HIGHWAY BOARD IS PLANNED IN FRANCE.

France is taking up the idea of a national department of highways, such as is now being fostered in the United States. All road vehicles, either motor or horse drawn, are to be taxed. All of the \$34,000,000, to be raised in this way will be used in the construction and maintenance of highways.

NOVA SCOTIA HIGHWAYS.

Nova Scotia will expend \$13,000,000 on its highways during the coming five years and intends to have the best highway system in North America.

SOIL TESTS AND IMPACT STUDY

Will Study Relation of Soil to Road Construction

An investigation which promises to place at the disposal of highway engineers important information regarding the relation of soils to highway durability has been undertaken by the Bureau of Public Roads, United States Department of Agriculture. This work includes taking sample of soil at spots in the subgrade of a highway where the road has begun to fail, studying surrounding geological conditions to determine how moisture arrived in the subgrade, thus destroying its value, making laboratory tests to determine the physical characteristics of soils, and obtaining a scientific measure of the bearing value of soils. In this investigation it is proposed to obtain as much cooperation as possible from the various state highway departments. The Bureau of Soils is co-operating with the Bureau of Public Roads in this work.

Preliminary investigation has been started in Maryland on the Washington-Baltimore road, and will be extended beyond Baltimore and on other roads in Maryland. Progress has been made in the matter of laboratory tests, a number of samples of subgrade material and other samples already having been examined.

The Federal highway engineers point out that soils differ widely in their ability to support loads, particularly when they are wet. Just why this is true and just what are the characteristics which make them different is little understood at present. It is in this field of investigation, of increasing importance because of the growing volume of heavy traffic, that the Federal investigators expect to secure important information.

GOOD ROADS SUNDAY MAY 16.

A call has been issued for the observance of Good Roads Sunday, May 16, when clergymen will be asked to call the attention of their congregations to the "relation between good roads and right living and good roads and Christian progress." The fact that the human family cannot exist unless the food supply is augmented is also among the points the pastors will be asked to stress.

The Selden Truck Co. recently sold a large block of its stock to employees at \$50 a share. The earnings of the company for the first quarter of 1920 were \$158,557 after deduction of taxes. This was equivalent to \$17 a share on the common stock.

INDIANA FIXES ROADS.

Indiana has begun the construction of a new state highway system to extend over 3200 miles.

NEW YORK LOADS LIMIT.

Governor Smith of New York has signed the Ferris bill, which more clearly defines the size of loads to be carried. It provides for a maximum width of a motor truck body or trailer of eight feet, a maximum height from the pavement to the top of the vehicle or load of 12 feet 6 inches, and a maximum total weight, including vehicle and load, of 25,000 pounds, the load to be so distributed that there shall not be more than 800 pounds per inch in width of tire on any one wheel. The maximum weight was the state law. The other stipulations form part of the uniform motor vehicle provisions which have been approved by practically all of the large motor organizations. No other motor vehicle legislation of moment passed the New York Legislature this year.

CONCRETE GEORGIA HIGHWAY.

Spalding county claims the distinction of being the first county in Georgia to build the entire mileage of the Dixie Highway of concrete. County commissioners throughout the state are going ahead with road construction on the theory that they will be reimbursed when the state bond issue of \$40,000,000 becomes a reality.

MORE CONCRETE HIGHWAYS.

The Concrete Highway Magazine for April shows that the United States will soon be a nation of concrete highways. Concrete roads are being begun or finished in every section of the country. Testimony is adduced to prove that the building of concrete highways has proven a boon to the automotive industry, trucks being especially favored where improved roads have made their use possible and profitable.

PENNSYLVANIA'S ROAD OUTLAY.

In the four years ending in 1922 Pennsylvania will have spent \$125,000,000 of state money in the construction of durable highways. The state will then have a primary highway system 3500 miles in length and a secondary system of about the same mileage. These roads are direct links between the various centers of population. They also parallel the railroads.

WOMEN FOR GOOD ROADS.

The campaign for a bond issue of between \$40,000,000 and \$50,000,000 for the construction of good roads in Georgia has received a decided boost by the action of the Atlanta Woman's club in forming a good roads committee to co-operate with other organizations of the state in backing the bond issue.

The Paige-Detroit Motor Car Co. has appointed its truck engineer, N. S. Reed, as consulting engineer of sales division.

C. M. Wood, Director of Goodyear's Good Road Bureau

In the same spirit which prompted the Goodyear Tire & Rubber Co. to go to the aid of the Lincoln Highway when help was sorely needed, that concern has established a Good Roads Bureau and secured for its directing force a man who is exceptionally equipped for the task in the person of C. M. Wood, former sales engineer for the H. W. Johns-Manville Co. and an ex-department manager for the Portland Cement association. Mr. Wood, who has long been an ardent advocate of good roads, is a mechanical engineer of unusual ability.

The bureau's special function will be the advancement of the cause of good roads, giving its strongest efforts in behalf of the construction of permanent highways, with adequate foundations, proper road drainage and wide enough for trucks to pass without getting off the hard surface.

Mr. Wood outlines the plans of his bureau as follows: To distribute reliable data on good roads and highways; to take an active part in good roads movements wherever possible by means of lectures, personal calls and advertising; to collect and investigate state and national highway legislation; to support financially and otherwise local good roads organizations as may be deemed expedient; and to prepare and issue pertinent literature for public distribution, covering good roads, their advantages and the details of financing road improvement and highway construction.

In connection with the Bureau of Good Roads, Washington, tests will be made to determine the destructive effects of impact forces upon road surfaces, in order that highways may be constructed to withstand such impacts.

KENTUCKY'S NEW ROADS.

Kentucky expects to have \$5,500,000 available for state roads in 1921. Projects are under way for the construction of a system of 3250 miles of trunk line highways, embracing both branches of the Dixie highway. Taxes on motor vehicles, gasoline and whiskey, the state road tax and Federal aid are to realize the amount figured on to do the work. A downward revision in horsepower and gasoline taxes are looked for in this state.

FILM BOOSTS GOOD ROADS.

The Virginia Good Roads association is to produce a motion picture, "Virginia's New Hour," to show the modern road in action and demonstrate its benefits. The picture also aims to turn the tide of youth back to the farm.

FACTS OF INDUSTRY AND FINANCE

WHITE MOTOR COMPANY TO ADD CAPITAL \$10,000,000.

The White Motor Co. is planning to increase its capital stock from \$25,000,000 to \$35,000,000, and a special meeting of the stockholders has been called for June 9 to authorize this action. The additional stock will be offered from time to time to care for the company's steadily expanding business.

The annual report shows a surplus after charges and Federal taxes of \$2,890,875, which is equivalent to \$5.83 a share of \$50 par value. In 1918 the surplus was \$2,680,585, or \$8.37 a share on the \$16,000,000 capital stock outstanding. A reserve of \$1,260,000 was held cut for contingencies this year, however.

The total operating profit last year was \$4,983,371, a decrease of \$964,123 from 1918. The sum of \$1,600,000 was set aside for Federal taxes, a half million less than in the preceding year. After dividend payments the report shows a surplus of \$1,429,975.

PARRETT MOTORS CORPORATION TO MARKET CULTIVATOR.

Dent Parrett has resigned from the presidency of the Parrett Tractor Co. in order to give his entire time to conducting the recently established Parrett Motors Corporation, Chicago, of which he is president. The new concern has extensive plans for the manufacture of power farming machinery, chief of which is the marketing of the Parrett Motor Cultivator, which has been in test and actual field work for two years.

Mr. Parrett has long been recognized as a leading figure in the farm tractor industry. Holding the rank of captain he supervised the construction of heavy artillery tractors during the war. He is prominent in the Society of Automotive Engineers.

TO MAKE 2½-TON TRUCK.

The Gottfredson Corporation, Ltd., has been formed at Walkerville, Ont., to manufacture trucks. The concern has acquired and is remodeling the Gramm plant and is about ready to start operations. During the coming year the company expects to produce 1000 2½-ton trucks of an approved model which has been in service and tested for the past six or eight months. The members of the firm are Benjamin Gottfredson, president, and Frank J. Joyce, secretary and treasurer, of the American Auto Trimming Co.

HUCKABEE COMPANY MOVES.

The Huckabee Tractor Co. of Texarkana, Kan., will move its plant and head offices to Jonesboro in that state, where it will be located on a 25-acre plot just outside the city. The company is capitalized at \$35,000. It will be ready to deliver tractors by July 1.

ORIGINAL OFFICERS STILL HEAD GEAR ASSOCIATION.

Following the Detroit convention May 1 the executive committee of the American Gear Manufacturers' association met and re-elected its officers as follows: President, F. W. Sinram; vice president, H. E. Berhardt; secretary-treasurer, Frank D. Hamlin. Standardization and a resultant increase in gear production was the chief theme of the convention and splendid progress was made.

The A. G. M. A., which is but three years old and has stuck to the same officers from the start, now has 80 company members against the original eight. During the convention President Sinram was presented a handsome watch and accessories in appreciation of his services.

Speakers at the convention were General Superintendent D. G. Stanbrough of the Packard Motor Car Co., J. A. Urquhart of the Brown & Sharp Manufacturing Co. and G. W. Tall of the Leeds & Northrop Co.

JUMPS TRAILER OUTPUT.

The Highway Trailer Co., Edgerton, Wis., is building another big factory addition, which will increase the daily output to 25 trailers. On March 1 the company had \$250,000 in orders for immediate delivery. The Continental Axle Co., an affiliated corporation, is producing 18 axles daily and is adding equipment that will triple this production by May 1. Joint branch offices have been opened at Cleveland and Toledo. James W. Monhall is general manager of both companies.

HENRY FORD & SON NOW HOLD FORDSON TRACTOR NO. 1.

Henry Ford & Son, Detroit, has gained possession of Fordson Tractor No. 1 through O. F. Leppo, Fordson agent in Sonora county, California, and it is due to appear in all future Fordson displays. This machine was presented to Luther Burbank, the plant wizard, before Fordsons were put on the market. It has been at work ever since and probably holds the record for results accomplished among tractors of that make. Mr. Burbank sold his ranch some time ago and thus Agent Leppo was able to secure the Fordson Tractor No. 1.

MOTOR WHEEL DIVIDEND.

The Motor Wheel Corporation, into which was merged the Prudden Wheel Co., Auto Wheel Co., Weis & Lesh Manufacturing Co. and the Gier Pressed Steel Co., has declared its first dividend, which included 50 per cent. in stock and 2½ per cent. in cash. The cash dividend is payable May 20 to stockholders of May 10 and the stock dividend June 1 to stockholders of May 15. It is announced that the concern's production is booked ahead for 10 months.

FRANKLIN CRAWLER TRACTOR ON MARKET SOON.

The Franklin Tractor Co., Greenville, O., will be ready to make deliveries early in June of its new crawler type of tractor, which was shown at the Kansas City show. Since the exhibit changes have been made in the engine and carburetor. A Kingston carburetor has been installed, designed to allow the use of kerosene for fuel after the engine is properly warmed up. The engine now used is a four-cylinder Erd, 4¼ bore and six-inch stroke, a vertical valve-in-the-head type. Its normal speed is 1000 revolutions per minute.

The tractor is recommended to be used with either a two or three-bottom 14-inch plow. It is credited with both drawbar and belt horsepower ratings of 15-30.

It has three speeds forward and one reverse, the former of two, three and four miles an hour and the latter 1¼ miles an hour. It is said to have shown a turning radius of six feet.

BIG SIMMS MAGNETO PLANT.

The Simms Magneto Co., East Orange, N. J., manufacturer of the Simms magneto for tractors, trucks, farm, marine and stationary engines, as well as passenger cars, is building extensions to its plant which will double production. The work will be completed by Aug. 1 and it is anticipated that not long after that date the concern will reach a production of nearly 1500 magnetos a day.

TO ASSEMBLE TRACTORS AND TRUCKS AT TOKYO.

Sale & Frazar, Japanese agent for Frazar & Co., New York City, which handles the Far East export for Fordson tractors, White trucks and several passenger cars, is building at Tokyo an assembling plant with a capacity of 300 cars per month. The present station at Yokohama will be continued.

FORD PRODUCTION RECORD.

The Ford Motor Co., Detroit, established a production record March 27 when 3756 cars and 500 trucks were turned out in a day. The previous record was a total of 3868 cars and trucks manufactured during May, 1917.

FEDERALS IN PHILADELPHIA.

The Federal Motor Truck Co. has established the Federal Motor Truck Co. of Philadelphia as a factory branch and distributing agency in that city. William H. Bartelman will be in charge.

PEARSON PROMOTED.

The Defiance Motor Truck Co. has made General Sales Manager A. M. Pearson assistant general manager and a director of the company.

GOOD ROADS AND MORE TRUCKS VITAL

Chapin and Graham Talk Good Roads To Senators

Roy D. Chapin, chairman, and George M. Graham of the Highway Committee of the National Automobile Chamber of Commerce, Inc., appeared before the Senate Committee on Postoffice and Post Roads the week of May 10 and presented a plea for a National Highway System and a Federal Highway Commission.

Mr. Graham put highways on a plane with railways and waterways in doing the nation's transportation work and showed the need of adequate roads to cut the cost of transportation from farm to market and in the carrying of raw material of all kinds. He quoted government figures to prove that improved highways would lower the cost of all commodities without penalty to the producer.

Mr. Chapin called for roads of a durable kind and urged that their construction be placed on a business basis, with politics eliminated. He stressed the future demands on the highways of the country.

Both speakers contended that the important step needed at present was the appointment of a commission to make plans for a national system, providing for the judicious spending of future appropriations rather than any immediate outlay.

Each speaker was on the stand for a lengthy period and their remarks on the subject were followed with close interest. It is anticipated that the bill will be reported in the Senate for debate at this session, but may not be taken up by the house until later.

EXPORTS AND IMPORTS.

Exports for April decreased \$135,000,000 and imports \$30,000,000, the Department of Commerce announces. Exports for the month were \$684,000,000 against \$820,000,00 in March, and \$715,000,000 in April last year. Imports were \$495,000,000, against \$524,000,000 in March, and \$273,000,000 in April of 1919. In April \$50,000,000 in gold was imported, the largest amount in any month for several years. Gold exports were \$44,000,000, about the same as last month.

TIMKEN-DETROIT DIVIDEND.

The Timken-Detroit Axle Co. has declared a quarterly dividend of four per cent. and an extra dividend of two per cent. on common stock, both payable May 15 to stockholders of record May 10.

WHITE HICKORY "AD" MAN.

The White Hickory Motor Corporation, Atlanta, Ga., has engaged Edward Fraser Carson, formerly sales and advertising manager for the Acheson Graphite Co., Niagara Falls, N. Y., for similar work.

NEW YORK CANCELS ALL NEW HIGHWAY WORK.

The action of New York state in cancelling all new highway construction, at least until conditions improve, is bad news to the automotive industry and its patrons. Only necessary repairs are to be made. While other states are considering similar action Massachusetts is going ahead with its 1920 programme.

New York's decision is based on the high cost of materials and labor, the shortage of labor, the shortage of railway cars and uncertainty of transportation, and the restriction of output in quarries. It was also agreed that if new contracts were offered at advanced figures the labor situation on contracts now being carried out would be seriously affected.

PNEUMATIC TIRED TRUCKS DO NOT HARM ROADS.

The Ontario Motor Truck Owners' Association has asked that pneumatic tired trucks be exempted from the provisions of the law which would limit the load of trucks to one-half their rated capacity during the months of March and April as a highway conservation measure. The association claims that a loaded truck with pneumatic tires does not exert as much pressure per square inch on the surface of the road as a heavy passenger limousine.

TO DO RAYFIELD BUYING.

The Beneke & Kropf Manufacturing Co., Chicago, manufacturer of the Rayfield carburetor, has appointed William E. Hutchinson, formerly of the Denby Motor Truck Co., Detroit, and the Edward Valve and Manufacturing Co., East Chicago, Ind., as purchasing agent.

LEFEVRE A TOWER MAN.

The Tower Motor Truck Co., Greenville, Mich., has secured W. G. Lefevre, former special representative of the Kelly-Springfield Motor Truck Co., as general sales manager.

Railroad Committee Asks for Trucks To Save Day

The railroads appear to have at last recognized the fact that the truck is an adjunct rather than a competitor to the railway business. This is shown in an appeal from the Car Service Commission of the American Railway association to shippers and consignees in which the latter are urged to use motor trucks in trap and transfer service wherever possible.

The blockade of freight seems to be growing. The trucks have been ready to jump into the breach, but while used in individual cases, this is the first time that any railroad agency has called for their general use to help relieve the situation.

The committee's appeal acknowledges the shortage of locomotives and cars and emphasizes the following points:

Obtaining prompt loading and unloading of equipment.

Loading of cars to full visible or carrying capacity.

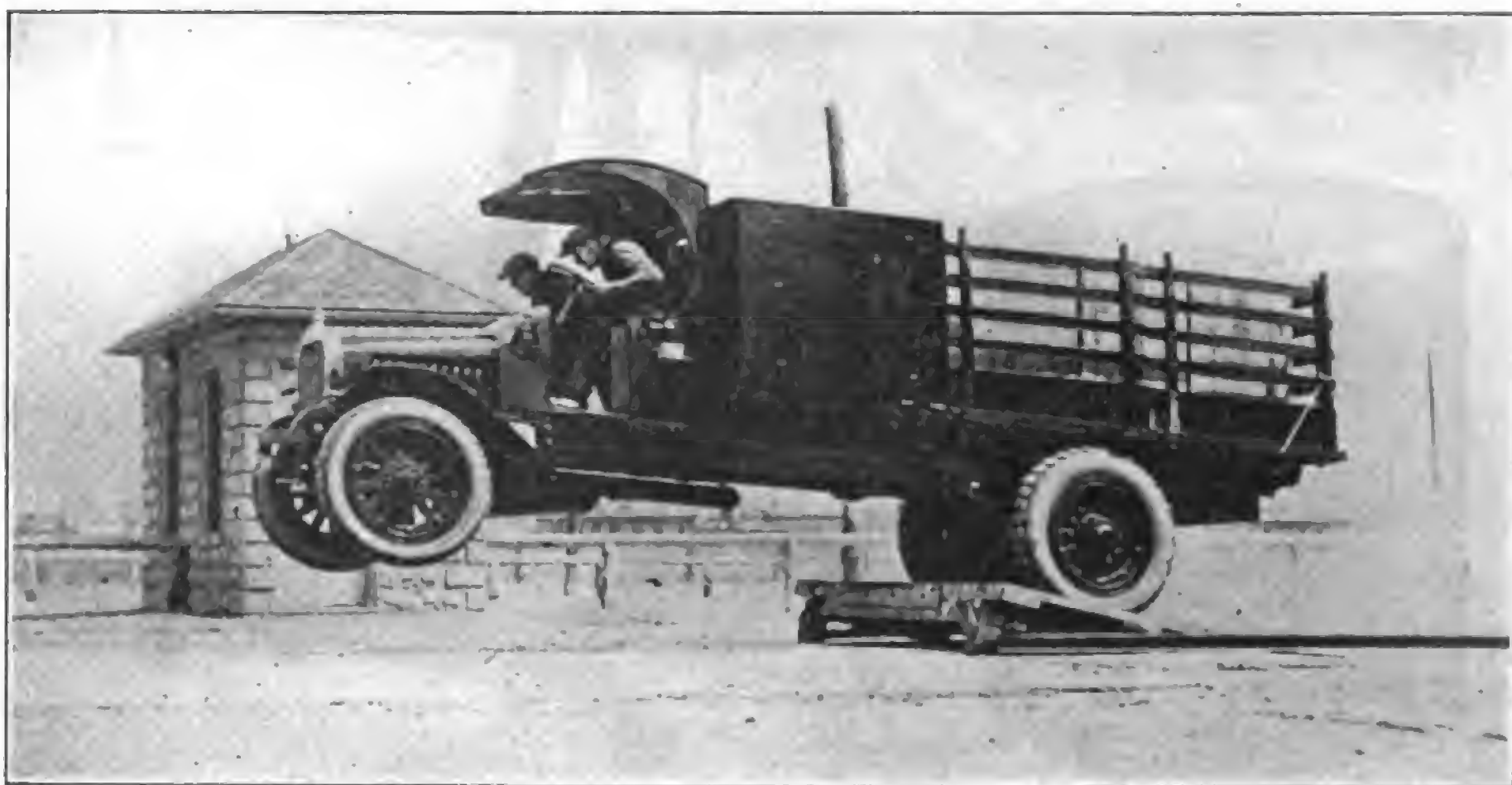
Placement of car orders in accordance with necessities.

Reduction of use of equipment in trap or transfer service when movement can be made by motor truck or wagon.

Development of practical arrangements for expedited through merchant cars.

DISTRICT OF COLUMBIA NOT FOR MARYLAND LAW.

A proposed Maryland law would license motorists under one fee, the license to be good either in Maryland or the District of Columbia. The District of Columbia does not approve the bill. These two territories are the only sections of the country where reciprocity does not exist for fleet owners. A truck driver from the District of Columbia must secure a Maryland license if he is to cross the line, no matter how long he may plan to remain.

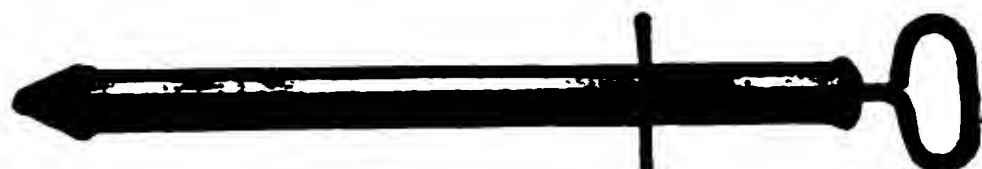


One of the Tests Made by the United States Tire Co., at Its Revere Plant at Providence, R. I., the Truck Making a Jump from an Incline to Register Photographically the Degree of Tire Deflection Upon Impact After the Flight Through Space.

New Motor Truck Accessories and Supplies

HANEY GREASE GUNS.

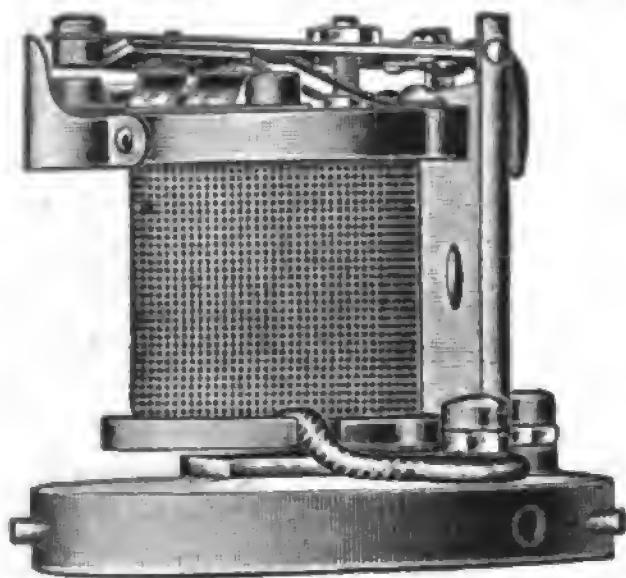
J. H. Haney & Co., Hastings, Neb., manufacture grease guns of different capacities for automobile, truck and service station use. The illustration shows a type designed for service station. The gun is made of heavy steel with a projecting arm at each side of the cylinder to afford easy operation. It is claimed this gun can be used for all kinds of oils and some grades of hard greases. It may be filled with hard grease by removing



the nozzle. It is furnished with either a curved or cone shaped nozzle, the latter being much improved when compared with the curved type previously manufactured by this company, as it will fit all openings up to and including the largest diameter of the nozzle, preventing the grease from backing out around the nozzle as the gun is discharged. This gun is adapted for drawing grease and oils from gearsets, differential housings, etc.

REVERSE CURRENT CUT-OUTS.

Reverse Current Cut-Outs for motor truck lighting plants are now made by the Briggs & Stratton Co., Milwaukee, Wis. They are so designed they automatically close the charging circuit, throwing the battery into the line when the generator pressure has reached a specified voltage, generally one-volt higher than the normal battery voltage. They automatically break the charging circuit,



throwing the battery out of the line when the generator pressure has dropped to normal battery voltage, insur-

ing a flow of current into the battery from the generator when the generator voltage exceeds the battery voltage, and preventing at all times a flow of current from the battery through the generator.

These instruments are furnished for use with voltages ranging from six to 32 and are made in one style, known as type 2000, with removable steel cover.

RIE NIE FAN BELTS.

The Durkee-Atwood Co., Minneapolis, Cleveland and Toronto, Can., manufacture a fan belt known by the trade name of Rie Nie Fabric. These belts are made from several layers of fabric impregnated with rubber and wrapped in a strip of the same material that binds them to-



gether and makes an oval edge, that is claimed will not fray against the flange of the driven pulley.

Rie Nie Fabric belts are endless and are guaranteed not to stretch in use. They are manufactured for practically all trucks from 1911 to 1919 inclusive, for Fordson and Moline tractors, and are listed by stock numbers.

CONTINENTAL RADIATOR STAND.

The Continental Auto Parts Co., Columbus, O., manufactures a radiator stand designed to meet the needs of repairers when soldering leaks. The stand can be turned in two directions so any part worked on may be level. The stand



is portable and it is not necessary to remove the radiator when testing for leaks. The clamps have rubber covered ends

and will not mar the finish and the supports are wood. The stand is structural steel and light in weight, but will hold the heaviest truck radiator.

BARNES MOTOR DRIVEN 14-24 INCH GAP LATHE.

The Barnes Drill Co., 814-830 Chestnut street, Rockford, Ill., now builds a motor driven, self-contained attachment for its regular stock 14-24 inch gap lathe, that is adapted for garages and isolated places where no line shaft but electric power is available. The manufacturer recommends a two horsepower electric motor, with a speed of about 1200 revolutions per minute. The speed of the driving shaft should be 200 revolutions, or



the same as the regular countershaft.

The lathe is a strong, well built tool, with six quick change geared feeds. The spindle is 2 15/16 inch diameter in the front bearing with a 1 9/16 inch opening. All gears are covered with guards. A sliding top bed adapts it for many works.

The lathe is furnished with countershaft, compound rest, one 20-inch diameter face plate, one dog plate, full set of change gears for thread cutting, two centers finished and ground, one of them hardened and the necessary wrenches. Extra attachments can be purchased, such as taper and milling attachments, when so ordered.

MUD AS A LAMP DIMMER.

The Service Motor Truck Co. of Wabash, Ind., through Pep-Ry-Peter, its monthly publication, offers a timely suggestion for an emergency dimmer for truck drivers engaged in inter-city hauling. Local ordinances sometimes demand a special kind of lamp dimmer. Mud smeared on the glass will satisfy the most exacting guardian of the law, and graphite, or some other substance that makes a greasy smear, may also be used with good results.

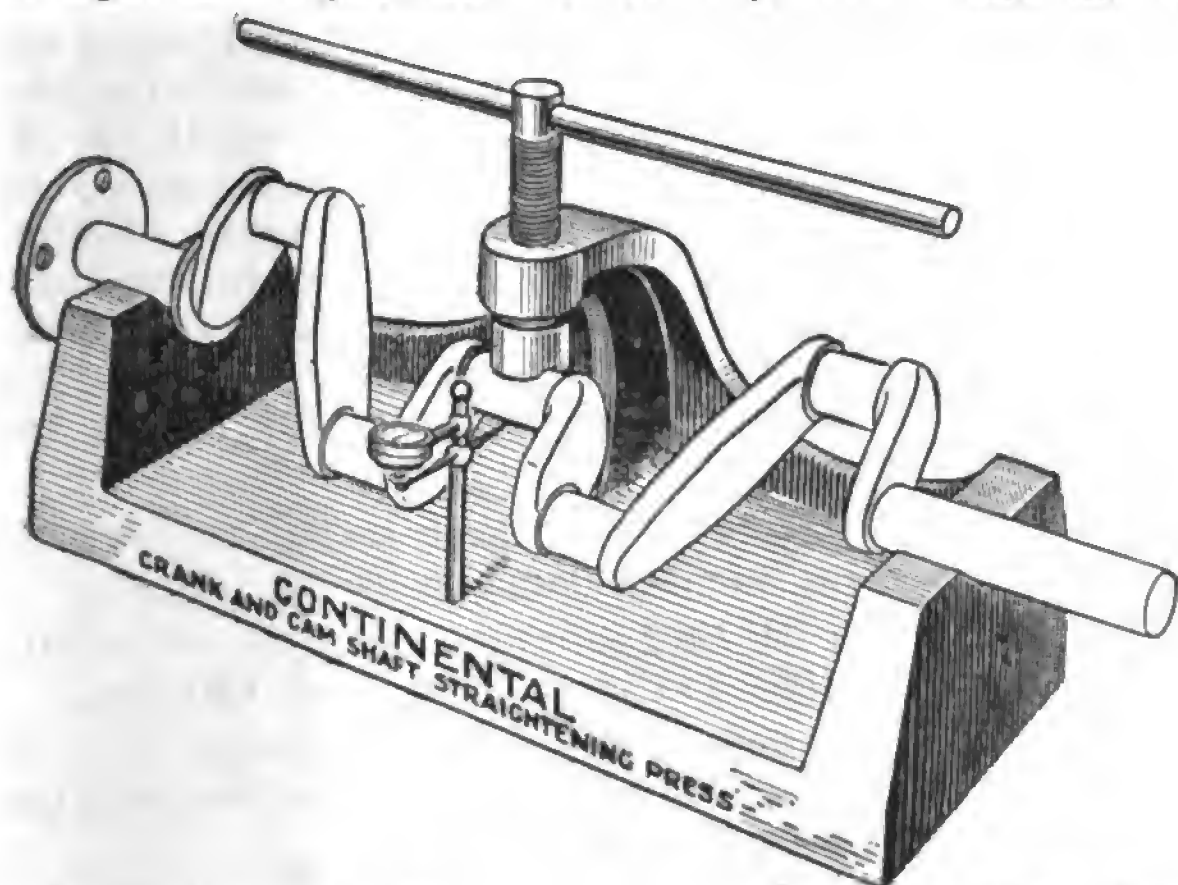
Garage and Service Station Machinery Tools and Equipment

CONTINENTAL STRAIGHTENING PRESS.

A useful service station equipment for handling truck repairs is the Continental crank and camshaft straightening press, manufactured by the Continental Auto Parts Co., Knightstown, Ind. It is designed for service stations specializing Ford truck work. It is two tools in one, is light in weight and with it very accu-

slidable arm resting upon the head of the valve and the elliptical end of the handle is placed as closely against the slide of the arm; a pin hanging conveniently from a chain is passed through holes of the elliptical end and the bar. A downward pressure of the arm compresses the spring. Removing the pressure on the handle causes the spring to free itself and the valve is easily removed. To re-

bolts. Work may be set up and removed quickly by this method of holding. The Vs cut on the face of the sliding jaw hold the work square and rigid. This feature is essential for setting up duplicate parts, which is difficult where blocks are used. The steel faces of the jaws are case hardened. The adjustable angle plate can be quickly set to any degree and held rigidly.



rate work can be done.

The stand consists of a bench rest, made of heavy cast metal, the ends vertical, with V shaped grooves to support the shafts and a screw clamp in a vertical bracket that fits the shaft at its center.

The stand is equipped with a dial test indicator reading accurately to a thousandth of an inch.

By testing Ford crank and camshafts during repair work accuracy is assured.

SMITH VALVE LIFTER.

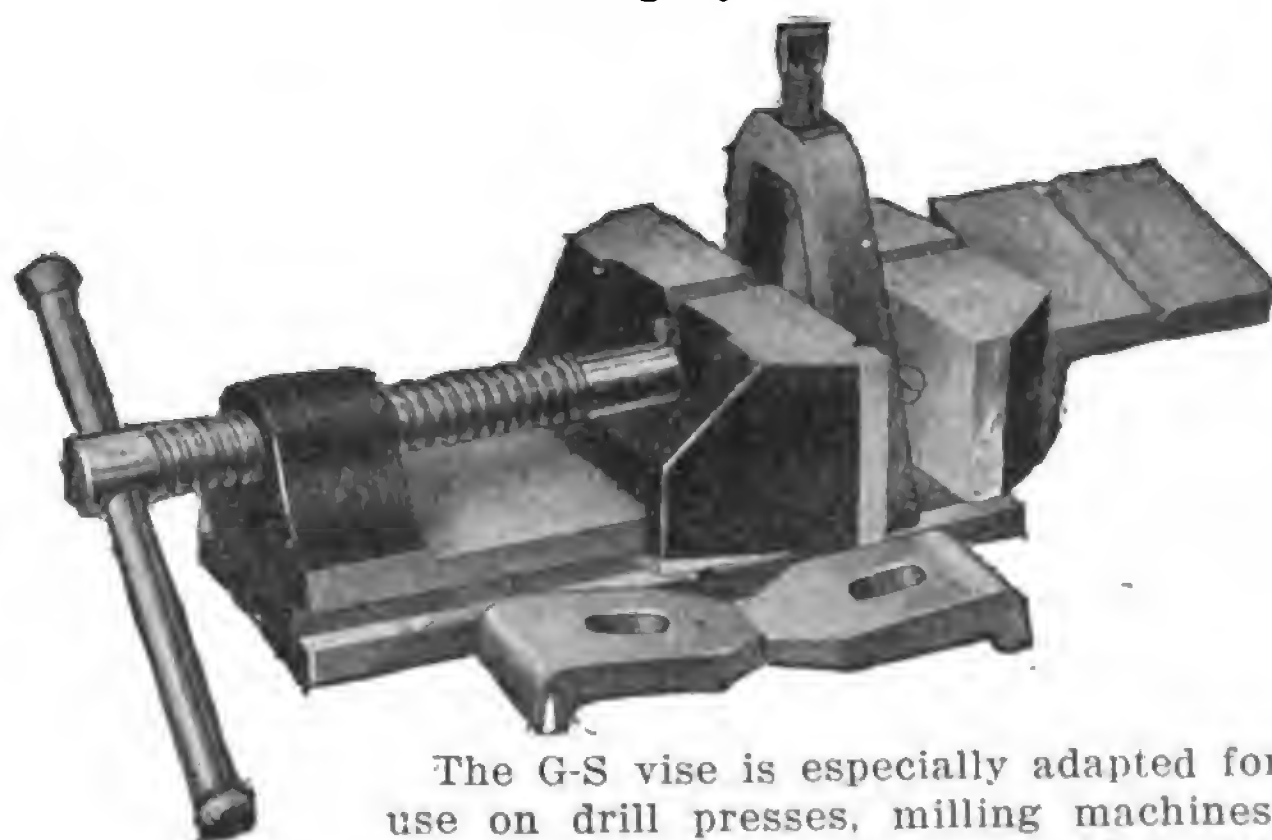
H. D. Smith & Co., Plantsville, Conn., manufacture valve spring lifters for truck and service station use that consist of a curved steel bar, forked at the lower end, having holes drilled in the upper end equidistant, a slidable arm fitting the bar, and a handle for operating having an elliptical shaped end with a hole drilled through one end of the ellipse. To operate it the forked end is placed under the valve spring cap, the

place the spring reverse the operation. The valve lifter may be adjusted by means of the pin, through holes through the lever and bar, for lifts from $4\frac{1}{2}$ to seven inches. The throat opening is $4\frac{3}{4}$ inches, height 13 inches, width $6\frac{3}{4}$ inches.

G-S COMBINATION BENCH VISE.

The Germanow-Simon Machine Works, Rochester, N. Y., is producing a combination bench vise for service stations that combines vise, V blocks and angle plates in one device that may be used for a number of operations.

The vise is accurately machined and heavily built. The base is a solid casting, with two $\frac{1}{2}$ -inch slots cut in the bottom. The sliding jaw is quickly operated by a heavy square thread screw, set in its center, which keeps the jaw square, prevents wear of the bearings and gives additional gripping power. The Vs cut across the top of the jaws and the steel clamp for holding the work obviates the need of V blocks, straps and



The G-S vise is especially adapted for use on drill presses, milling machines, planers, etc. Each vise is provided with two special straps for fastening it to a work bench. Made in two sizes, No. 1 and No. 2.

ELECTRIC BENCH GRINDER.

Electric motor driven bench grinders for service stations are manufactured by the Stow Manufacturing Co., Inc., Binghamton, N. Y., in two sizes, Nos. 81 and 82. The motors are completely enclosed, with starting and stopping devices located in the base. The grinders may be placed wherever electric current is available. For a few dollars extra a floor



stand can be added, on which they can be mounted, bringing the work at a convenient height above the floor. They may be used for such work as buffing, grinding, etc.; can be equipped with extended spindles for buffers in place of one of the wheels, can be fitted with flanges for clamping wheels to insure their running true, and with a water container for cooling work while grinding. Hoods for the cutting members are provided with hinged covers. The motors are wound for either 110 or 220-volt direct current and single two or three-phase alternating current, 60 cycle.



INDUSTRIAL PROMOTION PLANS

L. E. WAGNER IS NEW ONEIDA EXECUTIVE.

The Oneida Motor Truck Co., Green Bay, Wis., has secured the services of L. E. Wagner, corporation sales manager of the Diamond T Motor Truck Co., Chicago, for a similar post, and he has already assumed his duties. H. J. Butler, for many years prominent in the Edison Storage Battery Co., recently became sales manager with Oneida. Other well known men lately affiliated with the sales organization of that company include W. C. Calvert, W. J. Burns, W. D. Hawley, Newton Cox, Jack Moss, Sidney J. West, Charles A. Clark and A. G. Ingram.

Mr. Wagner, who is young in years, is old in experience, having been connected with the motor truck industry for the past dozen years, first with the Baker Electric Vehicle Co. and later with Diamond T Motor Truck Co. His knowledge of both gasoline and electric trucks and his high standing with the trade makes him a valuable asset to the concern to which he has dedicated his services.

TRAILER INDUSTRY BOOMS.

The building of trailers has taken on new impetus within the past half year and the production in the first quarter of 1920 equalled the entire 1919 output. Several companies have reorganized with additional capital, many have new plants and others are enlarging their present factories. New concerns are also entering the field.

TRUCKS SHOW UP CANALS.

New highways built to parallel the five navigable canals entering New Orleans threaten to put the waterways out of business, motor trucks carrying the fish, poultry, game and farm produce to market much faster than the canals, which have had a monopoly on this business since long before the Civil war.

"Truck By Trailers" Slogan Adopted By T. M. A.

At the recent meeting of the Trailer Manufacturers' association at Detroit, when it was decided to wage bitter war against the Internal Revenue Bureau ruling that semi-trailers are taxable as parts of trucks, the slogan "Truck by Trailer" was adopted for the entire industry and a distinctive design embodying the slogan is to be prepared for nation wide use.

There were highly interesting addresses, the speakers and topics following: Col. Charles Clifton, president of the National Automobile Chamber of Commerce, Inc., and president of the Pierce-Arrow Motor Car Co., "The Advantages of Cooperative Competition and the Benefits of Industrial Organization;" William E. Metzger, a director and ex-president of the N. A. C. C., "The Trailer as an Aid to Economical Transportation and the Preservation of Improved Highways;" Walter Wardrop, publisher of Power Wagon, "The Place of the Trailer in the Transportation Field;" D. C. Fennor of the International Motor Co., chairman of the Motor Vehicle Conference Committee, "The Trailer an Efficient Adjunct to the Motor Truck."

It was decided that the capacity rating of semi-trailers should be based on the total load to be transported and the capacity of pole, pipe and logging trailers or "dollies" on the actual weight of the portion of the load supported by the trailer itself. A committee on patents will endeavor to prevent litigation between members. Manufacturers agreed to make every effort to make trailers safe for other users of highways. Methods to demonstrate trailers were discussed.

Five new members were admitted as follows:

Lee Loader & Body Co. of Chicago; F.

P. Lyons, Inc. of Manchester, N. H.; E & W Manufacturing Co. of Milwaukee; Byron Engineering Works of Louisville, Ky., and Lapeer Trailer Corporation of Lapeer, Mich.

H. W. Perry was reappointed general manager for another year and he was instructed to take up with insurance boards the matter of insurance and insurance rates on trailers and on trucks towing trailers. Others elected were: Delegates to Chamber of Commerce of the United States, President J. H. Fertig; alternate to Chamber of Commerce, Vice President H. C. Fruehauf; to fill vacancy on executive committee caused by the resignation of W. R. Bonds, S. A. Griggs; legislative committee member to serve with C. H. Martin and H. W. Perry, Ike S. Byrum. A dinner was tendered the members and guests at the Detroit Athletic club by the Detroit Trailer Co. and the Fruehauf Trailer Co. of Detroit.

Members and other trailer representatives in attendance were as follows:

S. E. Liedabrand, vice president, Automotive Trailer Corporation, Chicago.

Graeme McGowan, president, and O. E. Byron, vice president, Byron Engineering Works, Louisville, Ky.

A. L. Macdonald, secretary, Continental Trailer Co., Detroit.

S. A. Griggs, president, and W. R. Bonds, ex vice president, Detroit Trailer Co., Detroit.

G. H. Williams, president, and R. C. Pfittner, E. & W. Manufacturing Co., Milwaukee.

A. H. Forsythe, manager Forsythe Manufacturing Co., Joplin, Mo.

Aug. C. Fruehauf, president H. C. Fruehauf, vice president, and E. L. Vosler, secretary, Fruehauf Trailer Co., Detroit.

Leo J. Kern, vice president, Wm. G. Hesse & Son Mfg. Co., Leavenworth, Kan.

J. W. Menhall, Highway Trailer Co., Edgerton, Wis.

C. L. Brodt, King Trailer Co., Ann Arbor, Mich.

S. B. Winn, general manager, Lapeer Trailer Corporation, Lapeer, Mich.

H. W. Howard, assistant to president, Lee Loader & Body Co., Chicago.

C. H. Martin, president, Martin Rocking Fifth Wheel Co., Springfield, Mass.

W. F. Jolley, secretary, and Mr. Davis, Miami Trailer Co., Troy, O.

W. E. Ferris, secretary-treasurer, Ohio Motor Vehicle Co., Cleveland, O.

Ike S. Byrum, sales manager, Troy Wagon Works Co., Troy, O.

Chas. C. Johnson and M. N. Christensen, partners, Samson Trailer Co., Jackson, Mich.

W. T. Shaver, president, Shaver Carriage & Auto Co., Des Moines, Ia.

Henry M. Wood, assistant sales manager, Trailmobile Co., Cincinnati, O.

Max Herrmann, secretary-treasurer, Warner Manufacturing Co., Beloit, Wis.

H. W. Perry, general manager, Trailer Manufacturers' Association of America, New York.



A Federal Truck Chassis Equipped with Pneumatic Tires Now Being Used by the Federal Rubber Co., Cudahy, Wis., for Testing Economic Value of This Type of Tires.

Ross Gears

A ROSS-steered truck is certain to be the choice of the buyer who knows and appreciates the superior quality of Ross Steering Gears in design, materials and workmanship. He realizes that the motor truck manufacturer who has been willing to pay a little more to build into his truck the safety, reliability and easy steering that Ross steering Gears guarantee, has doubtless been just as particular about every other part of the equipment and construction of his truck. One hundred and seventy-one different makes of motor trucks — representing nearly two-thirds of the entire industry — carry Ross Steering Gears as standard equipment.

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that Predominate on
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(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

FROM EVERY POINT OF VIEW

Circus Truck Train Cuts Costs and Saves Time

Todd's Traveling Tented Circus and vaudeville aggregation has solved the transportation problem which has been bothering circuses and traveling shows for many years. Of course the truck is the answer.

Proprietor William Todd has purchased a fleet of Republic trucks and finds that he has cut his labor and traveling time more than half. He does not care whether the railroads run or not. There is only one loading and unloading process now, and the saving of loading and unloading work is some factor in the life of a circus.

Mr. Todd declares that there is a saving all along the line and that, in addition to being always on time and needing less help, the actual cost of transportation is less, thereby adding considerably to the profits of the enterprise.

NEBRASKA PLAN TO REGULATE TRUCK RATES FAILS.

The attempt of the State of Nebraska to regulate motor truck rates has broken down, according to reports to the Federal Highway Council. The commission lacked authority to force truck owners to make detailed reports of their operating expenses and this fact is partially blamed for improper supervision. The main cause of the failure of the movement is said to be the varying conditions of the roads traveled. Truck owners who were forced to run on poor roads had no trouble showing the commission that they should be allowed to charge a higher rate than those operating over paved highways. Once the bars were let down the uniform rate plan went into the discard.

CHANGES IN FREIGHT RATES TO COST AUTO MEN MILLIONS.

The proposal to discontinue commodity freight rates on passenger cars and trucks shipped to Pacific coast territory would add \$3,000,000 to the \$15,000,000 a year now paid for this service and the coming advance in all freight rates would add \$4,000,000, which would mean an advance in rates of nearly 50 per cent.

These facts were brought out at the hearing on this subject before the Interstate Commerce Commission at New York City May 3-5. The hearing will be continued at San Francisco, May 24, and the traffic department of the National Chamber of Commerce, Inc., will keep up its fight to protect the rights of the automotive industry.

J. S. Marvin, general traffic manager of the N. A. C. C.; A. J. Henderson, White Co.; A. N. Nelson, Buick Motor Co.; C. N. Scharff, Chevrolet Motor Co., and C. H. Baughman, Winton Co., were among the witnesses at the New York hearing, where the N. A. C. C. was represented by George N. Brown, former chief examiner of the Interstate Commerce Commission.

OHIO CASE TO HIGH COURT.

The board of directors of the Ohio Automobile association has unanimously voted to carry to the Supreme Court its contention that the new Ohio graduated automobile license law is contrary to the 14th amendment, an adverse decision having been rendered by the Ohio Supreme Court. The law amounts to double taxation and is thus opposed to constitutional principles the association contends.

Government trucks for use in road making are being shipped to the various states at the rate of 100 per day from storing centers in Chicago, Indianapolis and Fort Monroe, Va.

Uncle Sam May Make Fuel From Waste Vegetation

The Bureau of Chemistry of the Agricultural Department may go Henry Ford's plan of making motor fuel from straw one better by getting that product from dried leaves. The bureau is now conducting experiments with leaves and also straw, corn and cotton stalks, which promise to be successful. The University of Saskatchewan has already made gas from straw and has operated an automobile with the product, according to H. B. Roethe of the bureau, who is sanguine as to the results of the present tests.

A small plant has been erected by the bureau on its experimental farm at Arlington, Va., for the manufacture of this fuel, which will resemble water gas in its properties, whereas the Ford aim was to develop fuel alcohol. It is anticipated that this gas will run motor driven trolley cars, automobiles and stationary engines and allow the farmer to run his farm machinery, fill his water tanks and light his house and barn.

The real problems facing the bureau are whether this gas can be made economically enough to be practicable and whether the necessary container can be made compact enough to be carried around on automobiles and trolley cars and thus employed in ordinary transportation needs.

STATE TRAFFIC LAW.

A uniform traffic law, standardizing the conflicting city ordinances in force throughout the state, is to be offered the North Carolina legislature by the Carolinas Automotive Trades association, an organization which is daily increasing in membership and efficiency. This body, formed last September, has already done much for the auto industry by having bills revised before passage by the two state legislatures. Many thousands of dollars were saved the dealers of North Carolina by one reversal of a decision secured through the efforts of the association.

LEGISLATURES VS. AUTOS.

The law is off on motor vehicles in the spring for state legislatures and the sons of the various states are sharpshooting at the target, most of them hitting wild, as usual. More than 700 measures are being considered, some of which are abnormally severe. South Carolina has put a fee of \$350 on seven-ton trucks and has authorized the highway commission to bar any trucks its judgment may determine. Load limits are also being suggested in New Jersey, New York, Kentucky, Mississippi and Rhode Island.



Goodyear Experimental Four-Rear-Wheel Driven Truck, Now Being Tested in Fast, Long Hauls Between Akron, O., and Boston.

Thru the **EISEMANN** Magneto

107 Truck Manufacturers Secure Perfect Ignition



"Who's Who" in Truck Manufacture

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Acme
All-Power
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*American-La France
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Ateo
Bell
Brockway
Burford
Capitol
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Corblitt
Dart
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(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

SIDE LIGHTS ON TRUCKS AND TRUCKING

Boston's Truck Show and Car Exhibit at Same Time

The Boston Commercial Vehicle association has re-elected President J. S. Hathaway and all the old officers except F. E. Wing, who is now in the passenger car business exclusively. W. H. Baker succeeds him. It was the consensus of opinion that next year's truck show be held as part of the passenger car display as in the past.

TRUCKS AND TRAILERS TO BE SEEN AT ELECTRICAL SHOW.

The entire third floor of the Grand Central Palace, New York City, will be given over to the Electrical Exposition in October to a display of every type of machine used in handling freight shipments at the steamship piers and railroad terminals. These exhibits are to be a special feature of the show and will be presented and demonstrated under the auspices of the Material Handling Machinery Manufacturers' association. Small trucks, trailers and portable cranes will be included.

TRAILERS IN DEMAND.

The point most prominently brought out at the May display of automotive fittings and equipment by Marshal Field & Co., Chicago, was that the trailer is rapidly finding its niche in the industry. The company has been unable to supply the demand, although purchasers have offered bonuses for immediate delivery.

STRONG INTERESTS REPRESENTED IN ATLAS CORPORATION.

The Atlas Truck Corporation, York, Pa., has elected the following officers: President and chairman of directors, John J. Watson, Jr., vice president of the International Agricultural Corporation; vice president and general manager, A. R. Cosgrove; vice president, Henry Hopkins, Jr.; assistant treasurer, Thomas Strauss; secretary, E. J. Shepard; directors, President Watson, General Manager Cosgrove, Reeve Schley, president of the Chase National Bank; F. M. Small, president of the Martin-Perry Corporation; W. D. Sargent, vice president of the International Motor Co.; Oscar Gubelman of Knauth, Nachod and Kuhne, and Herbert S. Carpenter of New York.

SIX BUSY YEARS COMING.

H. M. Lee, president of the Duplex Truck Co., has returned from a trip to the Pacific coast which, he declares, verifies his previous impression that not only will 1920 be the biggest year for the truck industry, but that it will be only the beginning of five or six of the busiest years the manufacturers have known. President Lee was pleased to find a strong demand for Duplex Four-Wheel drive and "Limited" trucks the other side of the Rockies, particularly in the mining, logging and oil districts.

TO ADVERTISE STANDARD.

The Standard Motor Truck Co. has placed its advertising department in charge of George A. Stracke, who was formerly with Campbell-Ewald, and who also conducted a retail agency in Saginaw, Mich.

New York Merchants Clash With Union Truckmen

The refusal of union truck men to handle freight or take freight from the coastwise piers in New York city where the longshoremen are on strike, thus tying up an important link in the city's transportation system, resulted in united action by the commercial organization of the city in the formation of a Committee for the Protection of the Rights of the Public in the Transportation of Goods.

An independent trucking service is expected to be one of the chief fruits of this action.

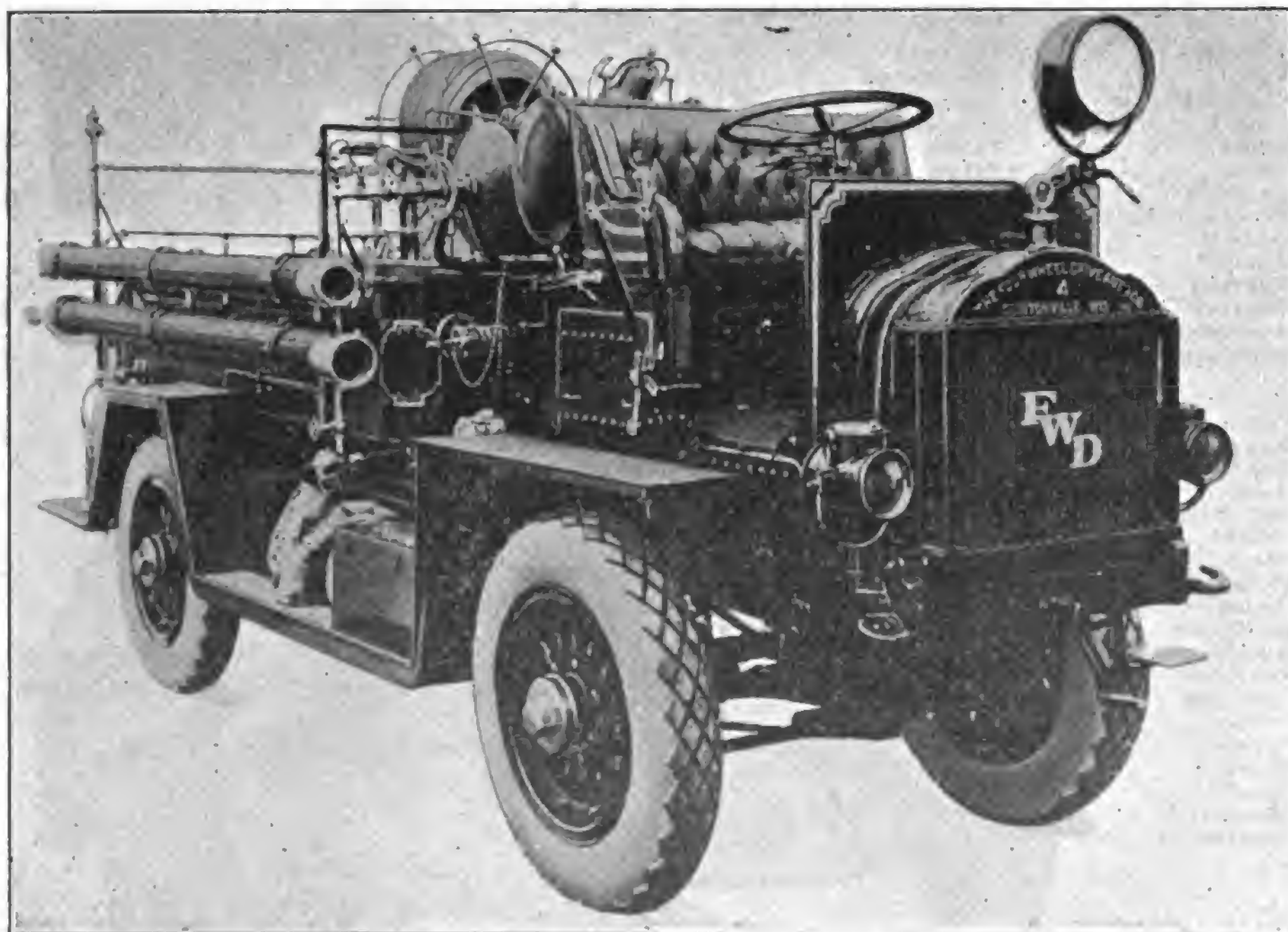
F. A. Molitor, consulting engineer, who was colonel of the 22nd Engineers during the war, is chairman of the committee and he will give his entire time to the solution of the trucking problem. J. C. Lincoln, manager of the Traffic Bureau of the Merchants' association, is secretary, and C. S. Keene, vice president of the American Tobacco Co., is vice president. A trucking committee of 20 and a shipper's committee of six from the parent body will work with the officers in putting through a programme which will free the city's transportation from interference of any kind.

The active committee of 29 includes the heads of every chamber of commerce and board of trade in Greater New York, the president of the state chamber of commerce, the president of the Merchants' association and leaders in every line of industry and commerce.

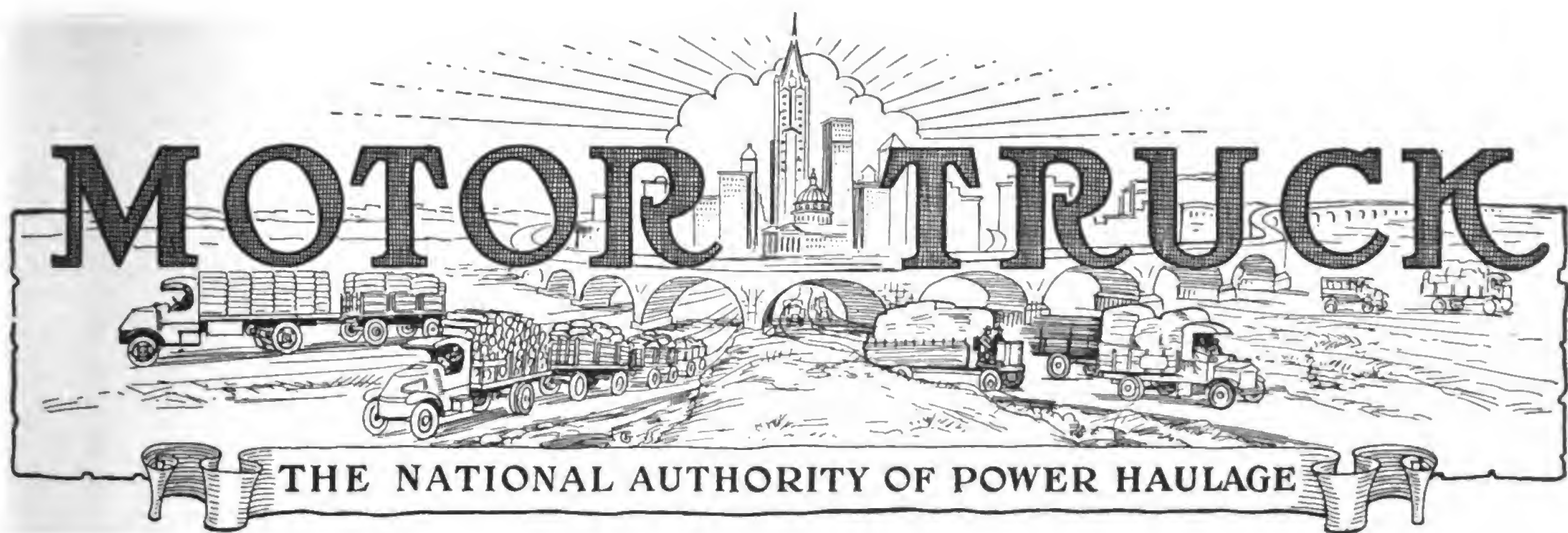
While the truck men and longshoremen claim that only minor lines and but a small share of transportation are affected, the average yearly tonnage of the four lines is over 3,500,000 tons, of which 600,000 tons are perishable and 225,000 cotton products from the South. Perishable food products are not very heavy and do not run into tons like canned goods, but are very large in volume. It is claimed that a daily loss of more than \$2,000,000 is involved.

Other union activities against continuous transportation are also within the scope of the committee's investigations, and remedial action is planned. The truck men claim to be 95 per cent. organized and have refused to haul freight to or from piers where non-union labor is employed. The receivers and checkers of steamships will not accept lumber from non-union truck men. The truck men and fish handlers bar fish caught by non-union fishermen from entering the channels of trade.

The press of Brooklyn and New York has lined up solidly behind the merchants and manufacturers, the newspapers voicing the opinion that it is a battle between the truck men and the public and citing the fact that in all such clashes the public always wins.



F-W-D Four-Wheel Driven Truck Chassis, Equipped with Pneumatic Tires and Fire Department Pumping Apparatus, for Which a Large Measure of Efficiency Is Claimed.



VOL. XI. NO. 6.

PAWTUCKET, R. I.

JUNE, 1920.

POWER TRUCK ECONOMY FOR ERECTING ENGINEERS

Contractors for Big Boston Buildings, Who
Do Not Own But Must Use Machines, Rely
Upon Operating with Equipment Supplied
at Demand by Haulage Specialists.

POWER trucks are regarded by contractors as indispensable equipment for general construction, and the engineering staffs of constructing companies rely upon their use as against any other form of haulage units for a number of very potent reasons.

One of the largest and best known concerns engaged in erecting is the George H. Fuller Co., which has its main office at New York City, and permanent offices and organizations in a considerable number of large cities. The company has erected many of the largest and finest structures in America and its experience is unusually broad.

Statement by one of its leading engineers that power trucks are the only form of transports that are seriously considered in work undertaken by the company may be regarded as representative of the views of other construction engineers, and as this opinion has been established by records and facts, there is no reason to believe that it will not be accepted literally by builders.

In substantiation of this statement is

the fact that in Boston the work on three building sites in preparation for erecting large structures begun during the winter and spring, has been carried on with trucks in conditions that would appear to be about as unfavorable for the use of machines as could be conceived,

from large down in the order given, and the contractor for the first two is the L. P. Soule & Son Co., and for the last specified the George H. Fuller Co.

Factors Governing Haulage Equipment.

The use of any form of haulage unit might be regarded as possible for any work, but the practical utilization of machines with reference to varying economies is quite another proposition. All depends upon the following factors and their relation to each other which must be determined by the engineering staff, and upon the knowledge obtaining of these factors:

Money (labor cost and investment in essential equipment).

Time (type and capacity of equipment and the operating conditions).

Conditions (operating area, character of material, volume of material, dis-

posal, loading and unloading, distance, traffic and legal limitations).

Limitations (topographical location, streets, business needs, traffic and building regulations, time, climatic conditions and operating plan).

Operating plan.



Looking Across the Excavation for the New Federal Reserve Bank Building, from Pearl Toward Oliver Street, a Truck Descending Ramp to Approach Steam Shovel.

and yet the utility and economy of trucks in these operations have been unusually satisfactory to the contractors.

The three structures are to be built for the John Hancock Life Insurance Co., the Federal Reserve Bank and S. S. Kresge Co. The buildings range in size

In presentation of three different works as a subject, statement may be made that the object of this article is to establish conclusively the fact that construction engineers must have extremely comprehensive knowledge of highway haulage, and for that reason a single illustration would not have value equal to a series of undertakings each carried on under widely varying conditions.

Boston's Largest Office Building.

Of these projects the construction of the new building of the John Hancock Life Insurance Co. is the largest. This is to be the first large office structure erected in the Back Bay section of Boston, and the site is the westerly half of a tract of land bounded by Berkeley, Stuart and Clarendon streets and St. James avenue. The tract is approximately 600 feet frontage on Stuart street and St. James avenue, and 300 feet on Berkeley and Clarendon streets. The easterly half is proposed as the site for a projected hotel to be included in the Biltmore chain.

The building is to be 250 by 250 feet, four stories height, with a central tower 60 by 90 feet 10 stories height, with four light wells from the level of the second floor to the top of the tower. Later on the company plans to build six additional stor-

The general contractor for the construction of the building is L. P. Soule & Son Co., and this concern made numerous contracts with other contractors for different specialized work. The contractor for excavating is A. G. Tomasello & Son, and the contractor for the foundation the John T. Scully Foundation Co.

Tomasello & Son and A. G. Tomasello prior to the organization of that concern, had engaged in contract work in different parts of New England, but generally in Massachusetts outside of Boston, much of it being highway construction. Within the last two years the company has made numerous contracts in Boston, where its principal activities now are.

Excavation Contractor Owns No Trucks. Tomasello & Son now owns several

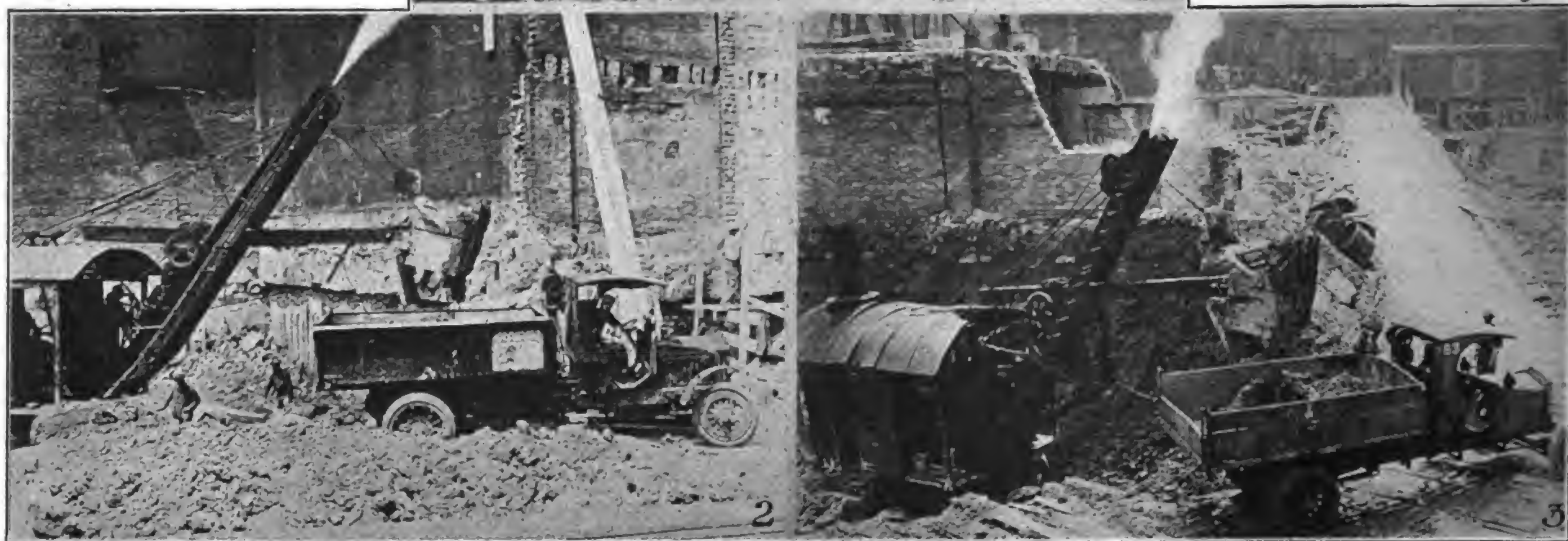
ed activity or enforced idleness and, of course, less capital investment is necessary.

Can Order at Will from Specialist.

At the other hand, with numerous concerns engaging in contract haulage it is possible to obtain practically upon order any number of units, so that one's operations may be sufficiently elastic to meet any condition that may arise. This may be regarded as further specialization, so that the contractor depending upon the resources of others is by no means paradoxical, but is based upon sound business experience and accurate determination.

The actual operations required the removal of approximately 70,000 cubic yards of material and establishing a level for the building approximately 20 feet below the level of the street grade. This necessitated the wrecking and removal of the 23 houses, a contract that was undertaken by the Swift-McNutt Co., but this work was not begun for several months after the excavating begun Jan. 10. Being filled land test piles were first driven and weighted to determine the sinkage.

Across the tract was the old roadbed of Providence & Boston railroad, which



Excavating with Power Equipment, New Federal Reserve Bank Building Site: 1, Loading Truck at Steam Shovel Before Machine Ahead of It Has Reached the Ramp; 2, With Planked Surface Loading Is Rapid Within Crane Radius; 3, Shovel 10 feet Below Truck Is Equally as Efficient as at Level.

ies on the structure surrounding the tower, the four tower wells to light the interior. The frontage walls will be 22, 25 and 15 feet from Clarendon street, St. James avenue and Stuart street. The building site is approximately 300 feet square.

Site Was Originally Filled Land.

This section of Back Bay was originally overflowed with tide water from the Charles river and was filled somewhat more than a half century ago. Under the fill is a stratum of material so yielding that no large structure can be built without reinforced foundation. Along the Clarendon street frontage of the land was a row of 23 brick houses, four stories and basement each, built about 1870.

steam shovels and expects delivery of three more in a few days, these machines being its main equipment. It does not own power trucks or animal carts or wagons, the policy, based on long experience, being to have the smallest practical investment in vehicles and to depend on those who specialize haulage.

The reason for this is that construction contractors' needs are extremely variable, and usually during winters they cannot engage in building and must do work that will be at least self-sustaining to maintain their organizations. While there is greater productiveness during actual contract operations from individually owned equipment, there is corresponding loss during periods of suspend-

was believed to be sufficiently substantial, but there was expectation that when the excavating had reached the lowest level there would be more or less seepage of water into the pit. First a steam shovel with a cubic yard capacity basket was started to make a round of the tract. Contract was made with the Thayer-Griffith Co. for whatever trucks was necessary for haulage, these trucks to be supplied each day to any number, the average worked being 15 five-ton units.

Disposal was a serious proposition and the nearest place that so large a volume of material could be placed was the property of the American Radiator Co., at the Mile road, so-called, at Dorchester, this necessitating a haul of three

miles and a round trip of six miles for each load. The average load was three ground yards, which averaged $3\frac{1}{2}$ yards by bulk, this difference being in the earth consolidated and the earth loose as excavated by the shovel. The average time for the round trips of the trucks may be accepted as 40 minutes, although it could be made faster with good conditions. There was compensation for this haul, however, from the fact that Stone & Webster, contractor for the American Radiator Co.'s building, had to have material to fill the land there and was willing to pay well for its delivery.

Frozen Ground a Great Obstacle.

The contract was made with the expectation of it being carried on despite the winter weather. When the cutting was begun an incline or ramp was made from St. James street that was planked to endure under the traffic on it, and the surface of the level was usually sufficiently hard to work the machines. The ground was frozen hard, so hard that extraordinary means were necessary to work the shovel except close to the

the first cut, and with this the number of trucks was increased. Then came the series of big snow storms. The depth of snow was not an obstacle to work. In fact it kept the ground from further freezing, but the condition of the streets and the dump were such that operations were suspended practically 11 days. During that time a small volume of material was hauled elsewhere, but it was trifling as compared with the total that could have been handled in normal conditions.

The contractor could not undertake to clear three miles of street for haulage, and though a gang of men worked at the dump to remove snow where the material was to be placed, continuous storms and high winds prevented substantial results for nearly two weeks. At the cutting the accumulations of water from seepage and melting snow necessitated the installation of two pumps, operated by gasoline engines, to reduce it so the surface could be used for traffic. Then besides the plank ways many loads of cinders were drawn into the cut and what were practically temporary truck paths were made.

double rows of small piles on which were placed large blocks of granite as foundations, on which the brick walls were erected. These piles and foundation blocks were obstacles to the steam shovels and the stone had to be hauled to the dump in the trucks, for it could not be otherwise disposed of. While the stone would seemingly be valuable building material, because of its weight and size, no one cared to buy it, preferring to use concrete or whatever required less handling.

Second Cutting on House Sites.

As the excavating was well advanced when the wrecking of the houses was begun, and had been carried as close to the houses as was practicable, this necessitated a second work along the Clarendon street frontage. There was intention of making a second ramp at this side of the cutting, but this was given over and the earth was taken out to the house foundation and then the shovel was taken up to a higher level and worked there as fast as the building were razed.

On this work from nine to 20 trucks



Large Area an Operating Advantage for Truck Use: At Left, a Cut at High Level with the Steam Shovel Along the Clarendon Street Frontage of the Site for the John Hancock Life Insurance Co.'s Building, Boston; at Right, the High Level from the Low Cut, Showing the Piling on Which the Demolished Houses Were Built—An Unexpected Obstacle.

foundations of the houses along the Clarendon street frontage, where the heat in the structures kept it from freezing to the depth it did elsewhere.

During January the shovel made good headway, but the extremely low temperature and the fact that there was constant increase of the depth of frost made necessary a thawing, which was done by slacking lime on the surface and the use of a plant that consisted of a large portable boiler and a wooden frame covered with a rope and canvas mat, which was operated continuously. Steam was driven upon the ground under the frame and areas were heated ahead of the shovel. From time to time large sections of frozen earth were loosened and moved from the path of the cut, and these were generally allowed to thaw from exposure. Breaking them so they could be hauled by the trucks would necessitate considerable labor and cost that was obviated by temporary removal.

Work Suspended from Big Storms.

The second shovel was started, this having the same capacity, cutting inside

The time of the trucks at the dump was economized by stationing a foreman there who collected the load tickets of the drivers, directed the dumping, and with a gang of men leveled the earth and placed the plank roadways so that the machines could be driven to and from the dump without delay. The headway between the trucks on the road was generally timed so that there would not be more than two machines at any one time at either the cutting or the dump.

Pile Driving Carried on with Work.

The original cut was made as near the lowest level as was possible, and after a considerable area had been cleared pile driving was begun about March 26 and this work was continued until 7000 piles, averaging six inches diameter at the small ends and 10 inches diameter at the large ends, had been driven to depths of 35 and 40 feet, where solid bottom was found. The piles were driven in groups and each group cut to a level.

When the demolition of the houses was begun at the center of the row these were found to have been constructed on

have been used as required, notification being given the Thayer-Griffith Co. the afternoon of each day the number that would be required the day following, and the precise number needed could be very accurately determined. More or less depended upon the movement of the shovels, for the position of these were necessarily changed from time to time and the work could be planned so that there would be very little if any loss of truck service.

The excavating is practically completed now and it will be possible for the foundation contractor to begin work before the first of July. There has been more or less accumulation of water since the advent of spring from rain and seepage, for the cut is considerably below the level of tide water in the Charles river, but a pump was installed driven by an electric motor with automatic regulation, so that when water reaches a determined height at the intake the pump will be started and will be stopped when a determined lower level is reached, this insuring against any volume accumul-

ing that will be an obstacle to operations. This pump will serve during the construction of the foundation as well.

Foundation for Big Bank Building.

The same contractors for building, excavating and trucks are engaged in making ready for the erection of the Federal Reserve Bank building, in the heart of the business section of Boston, at the southeast end of the block bounded by Pearl, Franklin, Oliver and Milk streets, with frontages on Pearl, Franklin and Oliver streets. The line of the property across the block is irregular, but the dimensions are approximately 171 feet on Pearl street, 150 feet on Oliver street and 254 feet on Franklin street, the area being a few feet less than an acre. This is to be the home of the bank, which is now occupying a part of a structure in State street. It is to be a pretentious building and will be probably the finest of the kind in New England, although not the largest in ground area.

This property was covered with a number of buildings, which were wrecked and the wreckers constructed an incline or

vehicles must be so there will be no obstruction of this traffic.

A ramp was constructed from Pearl street on which to move the trucks into or from the property, and the excavating was carried on with a steam shovel having a bucket with capacity of one cubic yard. The earth was of such character that the foundation could be laid at the lowest excavating level and plan was made to make the cut as near the foundation line as possible and pour the concrete as early as possible.

Disposal of Material Costly.

Disposal of the excavated material was here a very important factor because distance increased the cost of haulage and the time of the trucks. A considerable part of it was taken to the property of the American Radiator Co. at Mile road, Dorchester, a haul of $3\frac{1}{2}$ miles, and during the day, owing to traffic in the business section, the average time for the round trip was one hour, and an average load for the five-ton trucks used was $3\frac{1}{2}$ yards. Some of the material was hauled to a dump at First street, South Boston,

cause of the time required for these changes.

In this excavating, which will be completed about June 22, no hand work has been done except for "cleaning," and as the foundation has been in large part poured, the construction of this will be greatly expedited. The operations with concrete have been so planned that the sand, stone and cement will be discharged from trucks backed to the sidewalk in Pearl street and accumulated in the excavation where the concrete will be mixed and handled by conveyors and derricks and placed wherever desired.

Making Ready for Future Use of Trucks.

In the "cleaning" the two ramps will be removed and the excavation completed with reference to the foundations at the building line. When the foundation has been finished and the piers and girders for the first floor shall be erected, the ground floor can be temporarily constructed of plank and light trucks can be driven on to it from the street to discharge by dumping such loads as can be delivered in this manner.



Operating Trucks a Large Street Economy at Boston's Busiest Corner, Where Animals Would Be Impossible: At Left, Pedestrian and Vehicle Traffic in Temple Place; at Right, a Truck Under the Chute at Kresge Building Site, Ready for Loading.

ramp from approximately the center of the area to Oliver street, on which the trucks used in the work hauled the material to the streets. The cellars of the buildings were various depths with reference to the level of the streets, but the average was approximately 10 feet, so that there was need of removing material to a depth of 10 feet more, to reach the 20-foot level. This necessitated the removal of approximately 25,000 cubic yards of material, not including the general debris remaining after the demolition of the structures.

Could Not Obstruct Street.

With reference to contracting operations the same statement applies that has been made of the work for the new building of the John Hancock Life Insurance Co., and on April 1, L. P. Soule & Son Co., began its contract, which originated with A. G. Tomasello & Son.

All of the three streets about the property are comparatively narrow and during the business hours of the day there is much traffic through them. For this reason the city will not allow encroachment upon the roadways and the use of

a distance of $2\frac{1}{2}$ miles, the average time for these hauls being about 35 minutes.

The first two weeks a day shift was worked 10 hours, but beginning April 15 a night shift was worked for 10 hours, the material being discharged at the foot of Oliver street at scows of the Boston Development & Sanitary Co., the limitation being the scow capacity available, which varied from 100 to 125 loads a night. This haul was a quarter mile and four trips could be averaged an hour by the trucks. The number of trucks used each night depended upon the volume that could be taken on the scows, but generally was from three to four.

Conditions Limited Night Work.

The night work was continued until May 10, when it was discontinued because the capacity of the scows available constantly diminished. Night haulage to the dumps was not practical because these were not lighted and the trucks could not be worked on them safely. The cutting with the steam shovel necessitated frequent removal and the number of trucks used daily varied be-

One will note that the operations have been so developed that the streets will be kept free and uncongested, while there will be no obstacle to haulage to or from the building.

Both of these works have been carried on without animal equipment of any kind, and the excavating has been done by a contractor who uses trucks exclusively for haulage, but who owns no equipment. The proportions of these buildings are such that the material could be taken out with power machinery.

Rapid Work at "Busiest" Corner.

In striking contrast with these is the structure being erected at Washington street and Temple place for the S. S. Kresge Co., by the George H. Fuller Co., that has a site 85 by 95 feet, and this necessitated a cutting 87 by 97 feet. The depth of the basement of the building, the wrecking of which was begun April 1, was eight feet, and the plan called for excavation of 60 per cent. of the area to 35 feet and 40 per cent. to 15 feet.

The operations were to an entirely different plan than those previously described. The Fuller Co. is carrying

through all structural work and there are no sub-contractors. Because the excavation is comparatively small and to two levels the use of a steam shovel was regarded as impracticable. The major part of the cutting is at the side furthest from Washington street and the remainder is nearest that thoroughfare. Obviously a ramp or incline could not be used, and the erection of an elevator with from 12 to 15 tons capacity for lowering trucks from the street to the pit and raising them loaded was prohibited by cost.

This property is claimed to be the busiest corner in New England, and one of the busiest in the country. Both streets are open to traffic in one direction only, north in Washington and east in Temple place during the business hours of the day. Probably more pedestrians pass the corner than any other spot in Boston, for under the street, and partly under the site of the Kresge building is the Washington street station of the Boston subway system. Here, of all places, there was need of keeping the highways clear for traffic.

Could Load Only One Truck.

Construction could only be carried on by erecting a fence with decks to replace the sidewalks, so that excavation could be made to the curb line, with a gallery above the sidewalk to protect pedestrians, which could also be used during the erection of the structure. The fence and gallery is on two sides, and at the corner of the gallery is a small building that serves as an office. Directly west of this building at the Temple place side of the gallery is a larger decked area, from which there is a chute with a gate near the bottom.

The material was loosened in the cut with hand tools by laborers and placed in "scale pans" or shallow wooden trays, which were hoisted by power derricks to the gallery and dumped at the chute to discharge into the trucks standing below it. Only one truck could load at a time

and so there was a limit to the number of machines that could be operated.

All Hoisted in Scale Pans.

The excavated material was principally dumped at First street, South Boston, this being a haul of approximately $2\frac{1}{2}$ miles, or five miles to the round trip. The excavating was begun May 1 and was carried on with from two to nine trucks, and for a week from three to four trucks were used on a night shift, hauling earth to the scows of the Boston Development & Sanitary Co., at the foot of Oliver street. A part of the time scale pans, which have capacity of about a cubic yard of earth, were hauled to and from the dump, these being lifted from the trucks, discharged and replaced on the trucks by derricks.

The average loads were three cubic yards, which averaged about $3\frac{1}{2}$ yards in bulk when loosened. In some instances the scale pans were not completely filled and rarely were they loaded in excess of the yard. Loading at the chute was necessarily in the quickest possible time that there might be no obstruction to street traffic, and even during the construction of the walk, fence and gallery, there was no congestion of the roadways or sidewalks. This would not have been possible with animal vehicles and unless haulage were done at night nothing like the progress made would have been practical.

Street Economy a Large Factor.

Although power equipment was not possible for excavating because of the very small area and the unusual depth, trucks were utilized for all the haulage, and the economy of street area was an extremely important factor with the construction engineers, this being quite as essential as the economy of time. In fact the supervising engineer for the company is authority for the statement that horse vehicles would have been impossible. By that is meant that with any other equipment than trucks the com-

pany could not have operated with anything like the same degree of efficiency and there would have been excessive expense for labor and haulage, despite the much greater cost of trucks as compared with horse carts.

To have done the same haulage as was done with trucks would have required several times as many units as were worked, which would have so congested the street that traffic would have been seriously retarded. In contrast with this is the fact that the company by building a trap in the Washington street sidewalk has had delivery of sand, cement, stone and other material discharged from trucks backed to the trap without inconveniencing the public during the busiest hours of the day, and this will be continued during the progress of construction.

All Haulage with Power Trucks.

The building is to be constructed of steel and terra cotta and the materials will be hauled and delivered with trucks, such part of the delivery as may require considerable time being done after the usual business hours of the day.

With reference to deliveries of materials at the other buildings, these can be made more advantageously because the trucks can be driven directly into the work, and there will be no reason for retardation from traffic and the conditions will not add to the cost of the structures. The trucks for the work on the Kresge building thus far have been ordered from the Thayer-Griffith Co., and demands upon that concern for transportation have been met at all times.

Statement is made by the contractors that in all building operations of magnitude the engineers base their estimates on the work that can be done with and the cost of trucks, and that animal haulage is not a factor in construction work in communities of considerable proportions.

REPORTS SAVING OF 50 PER CENT. THROUGH PNEUMATICS.

The Harris Transfer & Storage Co., Muskogee, Okla., reports a gain of 50 per cent. in efficiency and decreased operation costs through the installation of Goodyear pneumatic tires. The saving is attributed to the ability of the pneumatic tired vehicles to operate in all kinds of weather because of superior traction, more trips due to increased average speed, reduction of breakage by better cushioning of shocks and satisfaction of drivers because of easier riding qualities and less repair work. As a result of the tests the company's entire fleet of 14 trucks are to be changed over from solids to pneumatics.

KANSAS CITY TRUCK RUN.

A. R. Kroh of the Goodyear Tire & Rubber Co. addressed the Kansas City Motor Car Dealers' association recently and advocated truck tours. A special committee is in charge of the matter and a run of two or three weeks may be taken during the harvest season.

More Cities Planning Motor Freight Terminals

Philadelphia, Birmingham, Ala., and Houston, Tex., are among cities which are considering the establishment of motor freight terminals. All of these communities have written for information on the subject to Minneapolis, which claims to be the first city in the country to install such a terminal.

A year ago there were but two lines operating out of Minneapolis on regular schedules. Now there are 22, which connect with 56 feeder lines. These do not include creamery hauling nor passenger lines. The average daily haul of a truck is 70 miles and the operating cost 14 cents a mile.

Boston and Providence will probably get its milk by truck at an early date. The milk producers of eastern Connecticut are planning to purchase heavy trucks for this purpose.

TRUCKS SAVE ONION CROP.

Motor trucks recently saved a crop for the onion growers of Coachella Valley, Cal., J. F. Lynch, director of sales of the Kissel Motor Car Co., reports. The crop was ready for shipment to the Los Angeles markets when the railroad strike was in full swing. Trucks and good roads did the freighting and saved the crop from spoiling. A Kissel truck played a prominent part in the task, making a record run to Los Angeles and back when it was found that the supply of gasoline was not adequate for all the trucks needed to haul the product to market. The Kissel made the round trip of 145 miles in a little over nine hours, hauling back 1000 gallons of gasoline.

800,000 TUBES IN 30 DAYS.

The Goodyear Tire & Rubber Co. recently produced 800,000 tire tubes in 30 days, thought to be a world's record. These tubes placed end to end would stretch 1300 miles. It is estimated that the air necessary to inflate these tubes would keep 4711 men alive for one day.

LONG DISTANCE EMERGENCY HAULS

DUPLEX TRUCKS MAKE RECORD TRIP THROUGH TORNADO.

The production of Duplex four-wheel drive and Duplex Limited trucks have increased rather than diminished during the transportation tieup. A regular express system was inaugurated with Duplex Limited trucks and these high speed vehicles rolled up before the factory at Lansing, Mich., daily with loads of supplies and materials from points far and near.

Transmissions for the Duplex four-wheel drive trucks were carried from Syracuse. Radiators and tubing, together with steel bars, were carried from Chicago. Trips were made to Detroit almost daily and loads of bar steel and miscellaneous supplies were rushed to the factory. Castings were carried down from Belding, Mich. Loads of hydraulic hoists were brought from Muskegon, Mich. Bearings were taken from Toledo to Wilkes-Barre. Differentials were rushed to Wilkes-Barre from Cleveland, these two shipments making a load of 6000 pounds on a 1½-ton truck on mountainous roads. The trip was made, however, in record time.

Less than 15 hours from Chicago to Lansing with combined loads totaling close to five tons was the record of two Duplex Limited trucks during this period of paralyzed transportation. The record was made on unsettled roads and scarcely had the Limited trucks reached South Chicago than they hit into a terrific tornado which devastated many parts of the country.

The two trucks followed a trail of demolished barns, roofless houses, uprooted trees and telephone lines which were laid flat. In spite of these difficulties and the fact that each Duplex truck carried nearly two tons, an average speed of 20 miles an hour was maintained on the return trip and stops were only made for food and fuel.

A candy manufacturer in Cleveland is bringing sugar from Boston by truck regularly at an average cost of only one cent a hundred pounds more than it would cost shipped as railroad freight.

Truck Service Keeps Many Auto Plants in Operation

The truck is not only keeping the factories of the nation humming today, making the marts of trade bubble with activity and playing the chief part in allowing commerce and industry to run along as of old in spite of freight and express embargoes, congestion and other handicaps, but it is the power which is allowing the automotive industry to revolve.

The automobile manufacturer, the tractor manufacturer, makers of parts and even the truck manufacturer, find the truck the sole agency to be relied on to keep things moving in these days of transportation tieups. Without the truck the nation's business would be next door to stagnant today.

Every automobile factory in Detroit has been kept in operation, thanks to the truck. To points as far away as Syracuse, N. Y.; Indianapolis, Chicago and Milwaukee the truck is going with the finished product or parts and returning with the materials needed to keep the plants running. Castings, bearings, steering gears, leather and all smaller parts are vitally needed in Detroit and trucks are used to get them there.

Singly, in fleets, in trains, the trucks are used. They always get there and always come back.

Indianapolis motor car and parts factories tell the same story. They must have materials and parts. Trucks are dispatched and they haul what is wanted. The plants are kept going when they would long ago have been closed if dependence had been placed on railroads.

Milwaukee factories have been running right along, as though there was no such thing as a freight blockade. Trucks are kept going day and night by the engine builders, bringing castings and forgings from points miles away. Where the railways and waterways help the trucks are used in feeding and distribution.

Plants at Syracuse, N. Y.; Newark, O., and other points are dispatching fleets of trucks hundreds of miles after materials. Everywhere the truck is standing up and delivering the goods.

TRACTOR HAULS HUGE LOG AFTER OTHER AGENCIES FAIL.

How the tractor is solving the hauling problems of the lumbermen was shown in no unmistakable manner recently when a Cletrac tackled a job that had resisted all other agencies and came through with flying colors. Down in the mountains near Tallihina, Okla., reposed a mammoth log which was worth money if it could be got to market.

Horses and vehicles of various kinds tackled the proposition in vain.

The log was 14 feet long, five feet in diameter and weighed 12,000 pounds. It was 17 miles from the nearest railroad. Swamp land and hilly territory lay between it and the railroad. It appeared to be consigned to remain forever in the woodland when the Cletrac tackled the job, and without extending itself, hauled the huge load over the 17-mile journey against hitherto insurmountable odds.

HARTFORD, CONN., TO TOLEDO, O., BY TRUCK.

The Fuller Brush Co., Hartford, Conn., forced to get its product to market despite freight and express embargoes, recently sent a truck loaded with 45,000 Fuller brushes to Toledo, O. After unloading the vehicle proceeded to Piqua, O. and secured a load of mop handles for the return trip, these handles being used in the manufacture of brooms. The company plans to make more trips by the same method.

The Wyman & Gordon Co., Worcester, Mass., maker of crankshafts and other automobile parts, has been the stopping place during the past few weeks for many trucks from Detroit, Mich., sent to Massachusetts by automobile manufacturers in the Michigan city for the materials to keep their plants running.



Tractor Hauling Enormous Log on Eight-Wheel Trailer: At Left, Cletrac Machine Moving Across a Stretch of Soft Sand; at Right, Dragging Through a Rocky Ford—This Timber Was Transported 17 Miles to a Railroad Near Tallihina, Okla.

AMONG SALES AND PLANT PERSONNEL

BUDA GETS BLANCHARD.

The Buda Co., Harvey, Ill., has appointed F. E. Blanchard assistant engineer of the engine division. He was formerly engineer and general manager of the truck



F. E. Blanchard, Assistant Engineer, the Buda Co., Harvey, Ill.

division of the Millburn Wagon Co., was with the Pope-Toledo Motor Car Co. in the early days of the industry and was in the testing department of the Willys-Overland Co. During the war he was in the experimental airplane division of the Fisher Body Co.

MALE DISTRIBUTING STEWART TRUCKS IN BUFFALO.

William J. Male, for four years director of the factory sales division of the Stewart Motor Corporation, has resigned and has formed the Male Motor Truck Co., to distribute Stewart trucks in Buffalo and vicinity.

GETS HAULAGE CONTRACT; THEN SELLS TRUCK.

W. E. Ellington of Kansas City has a novel method of selling trucks. He gets contracts for truck haulage and then finds a man to buy a truck, throwing in the contract as an inducement.

HOLTON HEADS KELLY-SPRINGFIELD CHICAGO BRANCH.

The Kelly-Springfield Motor Truck Co. has appointed Hoover Holton manager of its Chicago branch, which has headquarters in a new building, Michigan avenue and 25th street.

H. L. Beckwith, for the past five years manager of service for the General Motors Truck Co., Pontiac, Mich., has announced his resignation.

SUSSER, GOODYEAR EXECUTIVE, IS ONLY 30 YEARS OLD.

Clifton Susser of Akron, who has been appointed general superintendent of the Goodyear Tire & Rubber Co. of California, the Goodyear's new \$15,000,000 subsidiary on the coast, is only 30 years of age and began service with the company as a stenographer 8½ years ago. He left school at the age of 11 and went to work as a glass blower. He has been through every department in the Akron plant and no matter how hard he worked always studied at night. The new plant will start operations in June with 5000 men and will produce 5000 tires daily.

TRANSPORT EXPORT BUSINESS IN CHARGE OF C. H. KIP.

The Transport Truck Company has secured the services of Charles H. Kip to take charge of its export business and his acquisition should prove a decided asset to the organization. Mr. Kip was with General Motors Export Co., a subsidiary of the General Motors Corp., for several years and for a score of years previously was connected with the export business in steamship, railway and export houses. His wide experience and many acquaintances abroad thoroughly equip him for the post he will fill with the Transport company.

SELLS TRUCKS; BARS CARS.

G. W. Tremain heads the Tremain Motor Co., Fort Dodge, Ia., which will handle the Republic and Bethlehem trucks in 20 counties of northern Iowa. The company will not carry cars. V. E. Laurence, formerly in the truck and automobile business at Alhambra, Cal., and J. H. Leonard, former Studebaker dealer at Fort Dodge, are associated with him.

SERVICE ON DENBY TRUCKS.

Frank L. Hetzel, recently with the Hall-Scott Motor Co., San Francisco, has been appointed service sales manager of the Central Iowa Motor Co. at Des Moines and will organize a service department throughout the state for Denby trucks and Hupmobiles.

ALLAN SERVICE EXPORT MAN.

The Service Motor Truck Co., Wabash, Ind., has appointed J. W. Allan export manager and national buyer representative in New York city and has named L. H. Boydston as general manager of the Chicago branch.

STEWART SALES MANAGER.

The Stewart Motor Corp., Buffalo, N. Y., has appointed Edward K. Roberts general sales manager. He was for several years with the Bush Mfg. Co. of Hartford, Conn.

H. M. SLOAN TREASURER OF THE BUDA CO.

The Buda Co., Harvey, Ill., has secured H. M. Sloan as treasurer and the new official assumed office June 1. A mem-



H. W. Sloan, New Treasurer of the Buda Co., Harvey, Ill.

ber of the War Industry board and a widely known railroad man, Mr. Sloan is eminently qualified for his new post. He has been vice president of the Chicago, Rock Island & Pacific railroad, assistant to president of the Chicago, Milwaukee & St. Paul road, and has held other positions of importance and trust.

LAKE SANFORD SALES HEAD.

The Sanford Motor Truck Co., Syracuse, N. Y., has named Joseph M. Lake as general sales manager. He has been with the Chase Motor Truck Co. and spent two years in France with the Engineering Corps.

BUNN REPUBLIC BUYER.

The Republic Truck Co., Alma, Mich., has appointed H. J. Bunn as purchasing agent to succeed A. F. Wilkins, who has resigned to accept a similar position with the Wisconsin Motor Manufacturing Co., Milwaukee.

NEW STOUGHTON OFFICIAL.

The Stoughton Wagon Co., Stoughton, Wis., has appointed Orin S. Beroth, formerly service manager of the Indiana Truck Corporation, as director of service in its motor truck division.

C. M. Barber of Albuquerque, N. M., has signed a contract for the distribution of Winther trucks in New Mexico, western Texas, eastern Arizona and Chihuahua.

ROAD CONSTRUCTION PROJECTS OF THE

Railroads Propose Highway Works Be Stopped

The Association of Railway Executives has a plan under discussion which calls on the Interstate Commerce Commission and the public utilities commissions of the various states to halt construction work on highways, the idea being that this move would supply additional labor and materials for the railroads. It has also been argued that steel be diverted from the manufacture of automobiles to the making of freight cars and other equipment. This is hardly in line with the live-and-let-live policy which the automotive industry has always preached.

The Federal Highway Council realizes that this would be a blow at the nation

WAR DEPARTMENT COMES OUT FOR NATIONAL HIGHWAYS.

The War Department is the latest authority to declare for a national highway system, a report presented to the Highways Committee of Congress, founded on conclusions drawn from the journey of a motor convoy of 73 trucks from Washington to the Pacific coast last summer, unqualifiedly advocating a Federal system of roads. The report urges that the problem is a distinctly national question, rather than the concern of the individual states.

The chief reasons for the War Department's stand are that a national highway system would colonize and develop the sparsely settled sections of the country and is a defensive military necessity. The report states that the middle and western states are unable to financially undertake the building of the roads necessary

Colleges Ready to Train Engineers to Build Roads

(At the recent national conference on highway engineering and highway transport education at Washington, attended by educators, industrial leaders and road builders, it was agreed that:)

That there is no one domestic activity of more vital import to the people of the United States than an efficient and economical administration of our highway programme.

That there is a pressing demand for trained men not alone to guide this programme, but also to undertake the problems of the production and economic use of all vehicles over the highway.

That this need can only be met by increased educational facilities for turning out these men.

That the entire subject is one which should be closely coordinated and a permanent committee made up, as herein-after designated, should be appointed by the commissioner of education to consider this problem in its several aspects and to bring about a fuller understanding of it on the part of the people of the country.

That the component parts of this committee should represent the Bureau of Education, the Bureau of Public Roads, the Motor Transport Corps, the State Highways Department, the automotive industry and the state or private educational institutions as the groups best equipped to furnish the technical information needed and to work out these great public questions.

Thomas H. MacDonald, chief of the Bureau of Good Roads, announced that a recent canvass of 30 states which had appropriated large sums for road construction revealed that they were 24 per cent. short in their engineer requirements. Economical road building with the assurance of future efficiency demands, he said, well trained engineers for all departments of the work.

A series of resolutions closed as follows:

(This conference strongly recommends that universities and colleges offer courses in highway transport as their facilities will permit, and that at least 10 universities, located in different geographical sections of the United States offer short period advanced courses covering the various phases of highway transport and four-year courses in highway transport engineering or highway transport options in four-year collegiate or technical courses.)

ROADS IN MICHIGAN.

Contracts let by the Macomb county road commissioners of Michigan so far this year aggregate \$800,000. All are of seven-inch concrete foundation with a two-inch asphaltic concrete surface. They will be 18 feet wide.



Why Scientific Road Building Is Necessary: A Picture Made on the Main Highway Near Beaver Falls, Pa., Through Which All Vehicular Traffic Was Forced to Plow.

as well as the immediate interests involved and will naturally fight any such action to the limit. The motor truck has never been such a big factor in the country's progress or the advancement of the welfare of its people as now. To throttle this necessary transportation medium in any way would be fatal.

It would appear that the government has given the railroads all the best of the deal to date, supplying them with funds, the most important factor to their success. It is possible they may overreach themselves in this latest holdup attempt.

STREET REPAIRS BANNED.

The authorities at Moline, Ill., have decided to prohibit the use of the city streets as repair shops, asserting that the highways have often been blocked with cars being overhauled.

to provide a proper highway for transcontinental traffic.

BAY STATE ROAD BULLETINS.

John N. Cole, Commissioner of the State Department of Public Roads in Massachusetts, is to issue a regular road bulletin service which will be of invaluable aid to motorists and truck drivers. The bulletins will cover everything pertaining to the state of the roads.

FIX NEW YORK ROADS.

The New York State Highway Department is putting all roads leading into New York city in shape, following an appeal from the New York Automobile Dealers' association, which urged the necessity for such action because of the freight tie up.

NATION, STATES AND MUNICIPALITIES

HOLLAND ALSO TO INSIST ON USE OF PNEUMATICS.

Holland may join with Norway in the passage of legislation providing that motor trucks of certain capacity must run on pneumatic tires to lessen wear of the roadways. It is planned that trucks up to one-ton capacity must be equipped in this way. The Dutch Roads Congress will take action at a meeting in September. In Norway a law is already in effect specifying that trucks up to two tons must be pneumatically shod.

WANT HIGHWAYS OF NEW YORK OPEN YEAR AROUND.

The Albany, N. Y., Chamber of Commerce has launched a movement for united action among commercial bodies of the state to urge a sufficient appropriation by the legislature to keep the chief highways open to traffic the year around. The amount set aside for this purpose previously has been \$20,000, which is inadequate to break highways with snowstorms of the severity of those of last winter.

ALABAMA TO SPEND \$50,000,000 ON HIGHWAYS.

Alabama is to spend \$50,000,000 in the next 12 years for the improvement of its highways, all county seats being connected and linked with Mobile, the state's only port, and also with the transcontinental highways reaching the other states of the South. A state bond issue of \$25,000,000 has already been voted and the balance will come from Federal aid. A 50 per cent. increase in the automobile license tax will provide the state's share.

BETTER DELAWARE BRIDGES.

Delaware found out during the recent railroad strike that its bridges were not made to withstand heavy trucks. Instead of howling about the matter Delaware has set to work to strengthen these structures and it will not be long before a truck driver can go through the state without taking his life in his hands.

KANSAS GOOD ROADS SLOGAN.

Two years ago the good roads advocates in the State of Kansas adopted the slogan "5000 miles of 365-day roads for Kansas within five years." Approximately 3000 of the 5000 will be approved this year and at the present rate of progress the desired goal will be attained during 1920.

HIGH SCHOOL BOYS TO WORK ON PENNSYLVANIA HIGHWAYS.

Pennsylvania will engage high school boys to work in building state highways during the summer vacation at \$4.50 per day, shortage of man labor forcing this action.

All Heavy Haulage by Trailer Is View of Road Expert

An increase in tractor and trailer highway traffic to such volume that a half million of these units will be seen in operation on American roads by 1930 is forecasted by H. Eltinge Breed, former Deputy Highway Commissioner of New York state, who has taken charge of the highway engineering course at New York university.

Weight is given to this statement by the fact that 35,000 trailers are already registered in the United States and that more tractors are being added daily to the nation's haulage equipment.

Mr. Breed believes that plans should be made at once to make the highways fit for the increased use of these vehicles

This well known authority also brings out the point that tractors and trailers are less hard in impact upon pavement than heavily loaded trucks because of the distribution of the load over six or eight wheels and because of their slower movement. They would not require any firmer foundation or better type of surfacing than would ordinary heavy traffic.

Mr. Breed declares that all heavy traffic requires an adequate foundation and a durable type of pavement and makes a plea for the building of roads designed to care for this traffic, which is necessary to properly distribute the products of the nation and put the cost of living where it belongs.

TUNNEL TO CONNECT NEW YORK AND STATEN ISLAND.

Plans to connect Staten Island with greater New York are being pushed, the



How Good Roads Economize Truck Haulage: A Section of the Same Road Shown on Preceding Page, but Constructed to Endure Under Extreme Climatic Conditions.

yearly. This would mean provision for three lines of traffic near all large cities and on all trunk routes, with the possibility of an added 10 feet longitudinally for a fourth line.

At least nine feet should be allowed for each line of traffic. The additional width is necessary because tractors and trailers move at a speed of from six to 12 miles an hour and other cars, traveling from 12 to 40 miles, must have room to pass. Turns must be widened because of the greater length of the tractor and trailer and curves must be super-elevated in order that they may keep within their particular lines of traffic.

Mr. Breed calls attention to the important saving of gasoline which results from the using of tractor and trailer over the ordinary truck and the economy whereby one tractor truck, one driver and one trailer can do the work of three trucks. He urges that special attention be given to reducing grades of gasoline as the consumption of gasoline increases directly with an increase in grade.

project most favored by John H. Delaney, Transit Construction Commissioner, being a twin tube tunnel under the bay from 67th street, Brooklyn, to Tompkinsville in Richmond, with a direct communication with the existing Fourth avenue subway at the Brooklyn outlet. The tunnel would be about 8000 feet long between pier heads. Ventilation facilities would be constructed in the shoal water adjacent to the two shores. The cost of the enterprise would be \$25,000,000.

A tunnel between Rosebank, Staten Island, and 95th street, Brooklyn, which would cost but \$17,000,000, is also proposed. Four other tunnel proposals have also been advanced in addition to a suggestion regarding the building of a great bridge across the Narrows that would accommodate rapid transit lines, vehicles, freight and through train service. This latter construction would cost between \$75,000,000 and \$100,000,000. Either of the tunnels could be built within five years.

NEW PLANTS AND PRODUCTION PLANS

FULTON OUTPUT SOLD.

The Fulton Motors Corporation, Farmingdale, L. I., reorganized under Garvin Denby, has planned a production of 1500 trucks for the balance of the year. The entire output has been sold and many export orders cannot be filled. Many changes have been made in the truck, including an enlarged engine, the introduction of the Covert transmission, and a heavier frame. The gear reduction to the rear axle has been changed from 10 to one to eight to one.

The corporation is making ready to put out a new 2½ to three-ton model at an early date. A passenger car designed after the European type has also been perfected. J. L. Bell is in charge of factory operations and the sales and service departments are under the direction of C. J. Fox, Jr.

BIG MUTUAL TRUCK PLANS.

The Mutual Truck Co., Sullivan, Ind., has increased its capitalization from \$500,000 to \$5,000,000, all common, and will more than double the size of its present plant. A production schedule of 10,000 trucks annually, the maximum to be reached in three years, is planned. A two-ton truck is now being produced, but 3½-ton and five-ton vehicles will be built later. The Mutual truck is founded on the engineering ideas of President Robert Petrie. The company is but three years old and is going strong.

MULTIBESTOS N. Y. OFFICE.

The Multibestos Co., Walpole, Mass., maker of Multibestos brake lining and clutch linings, which maintains branch offices in Detroit, Chicago, San Francisco and Chattanooga, has also opened an office at 105 West 63rd street, New York City.

VREELAND TO BUILD.

The Vreeland Motor Co., Newark, N. J., manufacturer of Ultimate trucks, is getting ready to erect at Irvington a new plant at a cost of \$350,000. The factory will include several large one and two-story buildings.

TRUCKS FOR FORD CARS.

The Universal Car Co. of Cincinnati is to expend \$150,000 on a new department where trucks for use with Ford cars are to be manufactured. It is stated that the plans are being drawn at the Ford plant at Detroit.

PLANT FOR ERIE TRUCKS.

The Erie Motor Truck Manufacturing Co. has begun the erection of a plant at Wesleyville, Pa., which will be one of the largest in that section and will be devoted exclusively to the making of Erie trucks.

GEISEL TO BUILD FACTO TRUCK AT SPRINGFIELD, MASS.

A new factory for the manufacture of motor trucks is being erected at Springfield, Mass., for Adolph A. Geisel, who has been Eastern district manager and special representative of the Federal Motor Truck Co., of Detroit, Mich., since 1912. Mr. Geisel will build the Facto truck, which will be assembled with standard units.

The new manufacturer has purchased 55,000 square feet of land facing Pecousic Boulevard and the N. Y., N. H. & H. railroad tracks. Contracts have been let for the first building of a complete modern motor truck plant and the work is going forward so rapidly that the first unit of the factory will undoubtedly be occupied by July 1.

VAHAN PRODUCTS CO. TO BEGIN AT ONCE.

Officers of the Vahan Products Co., a new automobile and tractor parts manufacturing concern recently organized in Cleveland, are: President, F. S. Shields; vice president, L. H. Mesker; treasurer, A. W. Leuke; secretary, L. M. Lucius. Capitalization will be approximately \$1,000,000. The company has acquired the property of the Western Machine Products Co. for \$400,000. The Western company made airplane parts during the war. Operations will be begun immediately.

20,000 BETHLEHEMS A YEAR.

The Bethlehem Motors Corporation is setting a pace for Charles R. Newby, its new general sales manager, the company increasing its production schedule 275 per cent. over 1919, new additions at a cost of \$1,300,000 putting the plant capacity in excess of 20,000 vehicles yearly. Mr. Newby is a pioneer in the industry, his past connections including service with Walter E. Flanders, the E-M-F, Maxwell and Studebaker forces.

RAINIER EXPANSION.

The Rainier Motor Corp., Flushing, N. Y., must triple its production this year to meet its sales demand and is planning the erection of extensive additions to its plant. The new capitalization has resulted in the issuance of 7500 shares of preferred stock at a par value of \$100, and 30,000 shares of common, no par value.

FULTON PLANT IN CANADA.

The Fulton Motor Truck Co., New York City, has completed plans for the erection of a Canadian factory in or near Toronto to manufacture the Fulton 1½-ton truck. Already there are about six concerns manufacturing trucks in Ontario and other factories are planned.

STEINMETZ ELECTRIC TRUCK.

The Steinmetz Electric Motor Car Co. has three sites in mind for its new Baltimore plant. The new building will have at least 100,000 square feet of floor space and allow for expansion. The work will be rushed so that production will start in the fall.

The first product will be a 1½-ton truck, invented by Dr. C. P. Steinmetz, which is claimed to be from 1000 to 1500 pounds lighter than any truck now built to carry the same rated load. A special motor and storage battery will make this possible. Power will be transmitted to but one wheel, which does away with the differential. The driving radius will be from 40 to 50 miles to a battery charge.

TO BUILD VULCAN AXLES.

The Vulcan Motor Axle Co., capitalized at \$1,000,000, has secured a large plant at Milwaukee avenue, Detroit, and will build a series of axles for motor vehicles. The new factory is thoroughly equipped, part of it is already in operation and production will start in the fall.

The officers of the company, all well known to the automotive trade, are: President, F. C. Gilbert; vice president, F. B. Weaver; vice president, Sidney C. Love; vice president, C. C. Miller; secretary, J. T. Hanlon; chief engineer, R. G. Beechler.

WINTHER TRUCK SIDELINE.

The Winther Motor Truck Co., Kenosha, Wis., has begun work on plant additions providing 25,000 square feet of space for manufacturing the new passenger car the concern is to produce. Plant and equipment will cost \$100,000. The car will be known as the Winther Six.

TO MAKE TRUCK BODIES.

The plant at Menominee, Mich., formerly occupied by the Menominee Motor Truck Co., which is getting into its new factory at Clintonville, Wis., has been taken over by Charles Janson, proprietor of the Ford garage at Menominee, who will manufacture truck bodies.

NEW TRUCK BODY PLANT.

The McDermott Body Corporation, manufacturer of automobile truck bodies, will erect a two-story factory on a 20,000 square feet tract of land, recently purchased at the corner of Van Alst avenue and 13th street, New York city.

MACCAR CHASSIS PRICES.

New list prices for Maccar chassis are:

Model "S" with solid tires.....	\$2400
Model "L" with solid tires.....	2925
Model "H" with solid tires.....	3750
Model "M" with solid tires.....	4500
Model "G" with solid tires.....	5500

RELATING TO FACTORIES AND TRADE

PIERCE-ARROW ELECTS.

The Pierce-Arrow Motor Car Co., Buffalo, N. Y., has a number of changes in executive personnel as a result of the recent meeting of the directors. President John C. Jay, Jr., has been made chairman of the executive committee and will divide his time between Buffalo and New York city. George W. Mixter, vice president and general manager, becomes president and will have his headquarters in Buffalo. Col. Charles Clifton was re-elected chairman of the board of directors. Walter P. Cook, chairman of the board of directors of the Marine Trust Co., Buffalo, was elected a director and a member of the executive committee.

Other officers elected were: Vice president, in charge of commercial matters, W. J. Foss; secretary, W. C. Pearson; treasurer, M. E. Forbes.

BIG ACME BUSINESS.

The Acme Motor Truck Co., Cadillac, Mich., looks for a \$5,000,000 business this year, according to Secretary C. H. Helm. To cope with this schedule a new wing is being built to the factory and the office building is being enlarged.

\$300,000 AVERY BRANCH.

The Avery Co., Peoria, Ill., will start work in the fall on a branch at Fargo, N. D., to cost \$300,000. It will be located at Second street and N. P. avenue and will be five stories, 75x200.

APEX TRUCKS ADVANCE.

The Hamilton Motors Co., Grand Haven, Mich., has increased prices on its Apex truck line as follows: One-ton, \$1495 to \$1595; 1½ ton, \$1695 to \$1795; 2½ ton, \$2495 to \$2550.

20 ROWE TRUCKS A DAY.

The Rowe Co. of Lancaster, Pa., maker of automobile trucks, is making ready to jump its output from 10 to 20 trucks a day.

UNITED SALES CO.

The United Sales Co. is to occupy the garage, show room and service station at 4834 Market street, West Philadelphia. This concern distributes the Commonwealth 4-40 passenger car and Huffman six-cylinder cars and trucks. The building contains about 12,000 feet.

REO LEASE IN NEW YORK.

The Reo Motor Car Co. of New York has leased for a long term of years the entire building at the northwest corner of Broadway and 54th street.

The Southern Wholesale Grocers' association has decided to urge all its members to abandon horses and turn to trucks in order to speed up business.

NAPOLEON MOTORS CO. INCREASES CAPITAL \$2,000,000.

The Napoleon Motors Co., Travers City, Mich., maker of Napoleon trucks, by vote of the stockholders May 24, has increased its capital stock from \$500,000 to \$2,500,000 and will immediately make ready to bring about improvements and extensions which will place the company among the country's leading truck manufacturing concerns.

Of the added \$2,000,000 stock, one-half is to be common and one-half preferred. But a small proportion of the new stock will be placed on the market, the present stockholders immediately subscribing for a large majority of it.

TRUCK PRICES ADVANCE.

Among recent price advances on trucks were the following:

Acme, 1 ton, \$2075 to \$2175; 1½ ton, \$2275 to \$2375; 2 ton, \$2875 to \$3050; 3½ ton, \$3875 to \$4050; 5 ton, \$4975 to \$5150.

Commerce, model "E," solid tires, \$1690 to \$1855, cord tires \$135 extra; model "EE," cord tires, \$2065 to \$2255.

Schwartz double reduction, driven models, 1½ ton, \$2175 to \$2385; 2½ ton, 130 and 150 inch wheelbase, \$2675 to \$2850; 2½ ton, 168 inch wheelbase, \$2775 to \$2950.

Union, 2½ ton, \$2925 to \$3150; 4 ton, \$3750 to \$3957.

WHITE 1920 ROLL CALL.

The White Co., Cleveland, has ready its annual roll call of White truck fleets, which contains the names of hundreds of owners of 10 or more White trucks. The yearly growth of these fleets since 1910 is shown. A copy of the roll call will be sent on request.

WALKER-JOHNSON CAPITAL IS INCREASED \$3,000,000.

The Walker Johnson Truck Co., Woburn, Mass., is increasing its capital stock from \$500,000 to \$3,500,000 and is making plans for expansion.

DODGE BROTHERS CHANGES.

Changes in Dodge Brothers, caused by the gap formed through the death of John F. Dodge in January, have been completed and went into effect June 1. The lineup follows: President and treasurer, Horace E. Dodge; vice president and general manager, Fred J. Haynes; directors, President Dodge, Manager Haynes and Howard B. Bloomer, the latter personal counsel for years to the late John F. Dodge; assistant general manager, Arthur T. Waterfall; director of traffic, Preston G. Findlay; director of purchases, R. H. Allen; acting general sales manager, Charles W. Matheson.

SIX GENERAL MOTORS PLANTS.

The General Motors Co. is putting two new plants in Grand Rapids, Mich., one for the manufacture of Sunny Home power plants and the other for the making of Frigidair refrigerators. The Sunny Home is a 110-volt motor used to supplement the Delco system for home and factory use. The motors for the refrigerator are now being made in St. Louis and the cabinets in Grand Rapids, while the assembling plant is in Detroit. The company hopes to have six plants in operation next year and looks for an output of 100,000 in 1922.

SERVICE AIRPLANES BUSY.

The Service airplanes in use by the Service Motor Truck Co., Wabash, Ind., have been employed extensively by A. F. McCormick, purchasing agent, in speeding up the delivery of malleables and other parts. His latest trip was on June 3 when he fled to Muncie to transact business with the Muncie Malleable Foundry Co., and the Dean Forging Co.

WHITE CAPITAL \$35,000,000.

The stockholders of the White Motor Co. has authorized an increase in the capital stock from \$25,000,000 to \$35,000,000. No action looking to the distribution of the increased stock is contemplated at this time.



Train of 41 Cars, Each Loaded with Three International Trucks, Leaving Akron, O., on the Pennsylvania Railroad, the First Shipment from the Factory After Suspension of Shipments by Railroad Due to the Strike—During the Strike All Deliveries Were Driven Over the Highways.

DIVIDENDS AND CAPITAL INCREASES

PACKARD STOCK DIVIDEND OF 50 PER CENT DECLARED.

The directors of the Packard Motor Car Co., have voted a stock dividend of 50 per cent but deferred its distribution to await legislation at Washington. It was also decided to set aside a certain amount of common stock for debentures for conversion purposes.

The net profits of the company for the first seven months of its fiscal year beginning Sept. 1 were \$4,035,369 after Federal taxes and without including profits derived through the company's connections with its retail and distributing subsidiaries. The latter item is about \$600,000. Gross business for the current year is estimated at \$95,000,000 against \$58,729,000 last year, on which the profits were \$5,433,634.

INTERNATIONAL TRUCK DIVIDEND.

The directors of the International Motor Corporation on May 25 declared dividends on the first and second preferred issues of \$2.33 per share each, payable July 1 to stockholders of record June 16. These dividends cover the four months ending June 30. Four months ago a dividend was paid for a six months' period and the latest dividend declaration adjusts the date for the regular quarterly payment.

GMC Doubles Stock of Acceptance Corporation

Announcement has been made that the General Motors Acceptance Corporation has been authorized to increase its capital stock from \$2,000,000 to \$4,000,000, and that its surplus will be doubled from \$500,000 to \$1,000,000.

The additional stock has all been acquired by the General Motors Corporation, which owns the entire capital stock of the General Motors Acceptance Corporation.

The company, it is stated, is doing \$150,000,000 business a year. The increased capital will double its facilities for financing the sale of automobiles and other products on the deferred payment plan.

PACKARD REVENUE.

The Packard Motor Car Co.'s net profits for the first seven months of the fiscal year beginning Sept. 1 last were \$4,035,369, after deducting Federal taxes, and without including the net income from retail subsidiaries, which amounted to approximately \$600,000. The net profits for the year ending Aug. 31 last, after deducting Federal taxes, were \$5,433,634.

FRANKLIN COMPANY PLANS 250% STOCK DIVIDEND.

The stockholders of the H. H. Franklin Automobile Co. will hold a special meeting June 21 to vote on a proposed increase on the authorized common stock from \$2,000,000 to \$15,000,000, par value \$100 per share, and in the preferred from \$5,000,000 to \$15,000,000. The addition to the common stock is intended to be distributed among the stockholders in the shape of a 250% stock dividend. It is understood. After the stock dividend payment the company shares will be converted into an issue of 600,000 new shares of no par value.

INTERNATIONAL MOTOR TRUCK EARNINGS.

The International Motor Co.'s earnings in the first four months of this year exceeded \$1,300,000 after charges and taxes, which is at an annual rate of more than \$10 a share on the 283,108 shares of common stock. Profits last year were equal to about \$25 a share on 70,778 shares of common stock outstanding Dec. 31.

The company, which has \$20,000,000 working capital, is gradually increasing its output. During the first quarter 1800 trucks were turned out. The production was 800 in April and 820 in May.

Further Advance of Truck Prices Is Anticipated

A further increase in the price of trucks and passenger cars is inevitable and announcements are due all along the line late this month, according to reports from Detroit. The continued increases in the cost of parts and material is causing the advance, which, in some cases, will be greater than any announced heretofore.

FENN OUIJAS HAPPY FUTURE FOR TRUCK INDUSTRY.

F. W. Fenn, manager of the truck division of the National Automobile Chamber of Commerce, Inc., recently visited factories in New York, Wisconsin, Illinois and Michigan, and now radiates optimism over the future of the automobile industry, with trucks in the lead. He found the demand exceeding production everywhere, but noted that most of the manufacturers have additional sites already secured for expansion.

BETHLEHEM SUBSIDIARY.

The Bethlehem Motors Corporation of New England has incorporated as a subsidiary of the Bethlehem Motors Corporation with a capital stock of \$300,000.

TRUCKS PROVE A REAL ALLY TO THE RAILROADS.

What the truck has done to save business during the present transportation crisis was indicated in reports presented at the annual meeting of the National Automobile Chamber of Commerce in New York city June 3. The truck was officially recognized by the Interstate Commerce Commission, which suggested to the railroads the use of as many trucks as possible at the various terminals.

By enabling the railroads to handle long haul traffic with greater efficiency and greater profit through taking care of the short hauls which were handled at a loss the truck should be regarded by the railroad men as an invaluable utility.

COLT SEES BUSINESS APLENTY.

Samuel P. Colt, chairman of the board of directors of the United States Rubber Co., sees a wonderful future for the motor industry, with the truck holding a prominent place in the spotlight. He looks for no setback for the automotive business in the present readjustment, expressing the belief that more motor vehicles will be sold six months from date than now. He calls attention to the fact that trucks are being used in greater number daily and that passenger cars are being constantly pressed into service for business purposes.

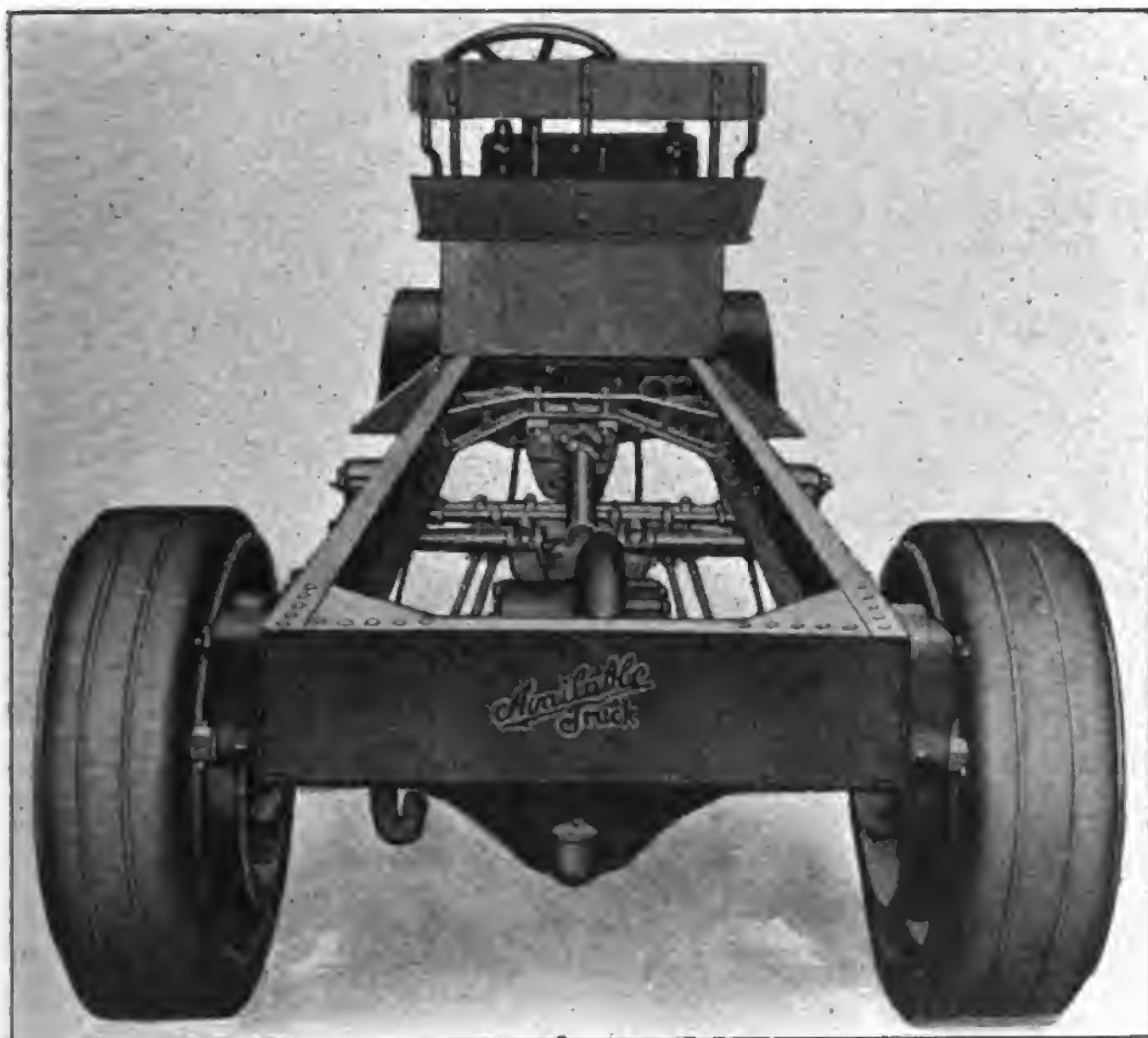
Trucks and Tractors Best Product for Auto Industry

Not a few in Wall street have been saying recently that the bloom was off the automobile industry and that from now on there would be a decrease in production. It stands to reason that the abnormal demand built up as a result of the lack of production during the latter part of the war period will decline, but the automobile companies are not overlooking the possibilities. Many of the companies are turning their attention to the manufacture of trucks and tractors. This field has not been touched with production on a scale to meet the rapidly expanding needs, and it is asserted that a big opportunity lies open here which will keep the automobile plants working at full speed.

STANDARDIZED TRUCK BODIES TO CUT COST OF HANDLING.

A standardized unit container in the form of a demountable closed motor truck body, which could be readily transferred by cranes between railroad flat cars, truck chassis, warehouse floors and vessels, has been offered as the best means of cutting down the present excessive cost of terminal handling.

NEW AVAILABLE TRUCK SERIES



Rear End View of an Available Five-Ton Truck Chassis, Showing the Extremely Heavy Frame and the Power Transmission System.

PRACTICAL service experience covering a period of more than 10 years is represented in the series of trucks built by the Available Truck Co., Chicago, which consists of units of 1½, 2½, 3½, five and seven-ton load capacities. These machines are claimed to be extremely enduring and economical and the design, which has been standardized, is such that the trucks can be utilized with unusually satisfactory results in a very wide diversity of work. The machines are designed to conventional practice and statement is made that from every viewpoint they have been proven mechanically.

The company is one of the pioneers of the industry, beginning operations more than 10 years ago, and the first truck built, a light, chain-driven type, which has been driven approximately 215,000 miles, is still in use and is today a very useful and economical vehicle. Only when the latest productions are seen beside the original design is there realization of the progress made by the industry.

The company has operated conservatively and has made consistent growth. It has increased its production to meet demands and its sales organization has been extended until today the company has representatives in all the principal commercial centers of the country. The factory now produces several completed vehicles daily and it has equipment facilities that insure the highest quality workmanship.

The location of the factory is advantageous for shipping, which is a potent factor in making quick deliveries.

The chassis are constructed from very high quality units, which were determined after careful tests, and in the design these have been coordinated with the object of obtaining construction of extreme strength, that can be operated

and maintained at comparatively low cost, and which will have great service life.

The wheelbase lengths of the several chassis, in the order of capacities, are 144, 152, 176, 190 and 190 inches respectively, and the models are designed by the series letter H and the rated load capacities. The engines used are all Continental Red Seal, and in the order given these are 3¾ inches cylinder bore and five inches stroke, 4½ inches cylinder bore and 5¼ inches stroke, 4½ inches cylinder bore and 5½ inches stroke, 4¾ inches cylinder bore and six

inches stroke, and five inches cylinder bore and 6¼ inches stroke, which are rated at 22.50, 27.20, 32.40, 36.10 and 40 horsepower by the S. A. E. formula, but which are claimed to produce considerably in excess of these ratings. The cylinders of the two smaller sizes are cast in blocks, but the cylinders of the other engines are cast in pairs.

All of the engines are the latest productions, developed by war experience and are modifications of the types that were used for the construction of trucks for the Motor Transport Corps of the United States Army. All are designed with detachable heads, with large water jackets to obtain efficient cooling, with

all valves surrounded by water, with generously proportioned valves, and the parts are unusually heavy to endure wear. The cylinders are carefully ground to size and the pistons are balanced and fitted to minimize vibrations. The intake and exhaust manifolds are in combination to use low grade fuel efficiently.

General Engine Details.

The crankshafts and camshafts are unusually large three-journal type steel drop forging, heat treated, ground and balanced to finer dimensions than is usual in engine construction. The timing gears are large, wide faced and helical cut. The crankcases are cast from aluminum in two sections, with the oil reservoirs so designed that they may be readily cleaned. The crankshaft and crankpin bearings are high grade babbitt metal in bronze shells, fitted so that they may be precisely adjusted.

The engines are cooled by circulations of water through the cylinder jackets and radiators with finned corrugated tube cooling sections, with cast top and bottom tanks, forced by rotary pumps. The radiators are cooled by drafts of air from fans driven by flat belts. The engines are lubricated by centrifugal pumps driven by the water pump shafts, which force oil through manifolds to the main crankshaft and camshaft bearings and timing gearsets; through ducts drilled in the crankshafts to the crankpins and thence through tubes on the connecting rods to the wristpins. The cylinder and piston walls, the cams and valve tappets and valves are lubricated by the oil thrown off from the crankpins by centrifugal movement.

Efficient Lubrication System.

The engines are protected from abrasives, all moving parts being thoroughly enclosed and they are exceptionally ac-



Five-Ton Available Truck, Equipped with Cab and Power Hoisting End Discharge Body, the Radiator and Engine Being Unusually Well Protected by Bumper and Guard.

cessible. The fuel is supplied through Zenith carburetors for the 1½, five and seven-ton chassis and through Stromberg carburetors for the 2½ and 3½-ton machines, and the source of ignition current is Bosch high-tension magnetos for all models.

The power is transmitted through multiple dry disc clutches that are self-compensating and which require no lubrication and practically no attention, and short shafts with two Daimler type fabric flexible joints to the transmission gearsets, which are suspended at three points from heavy malleable cross frame members. The gearsets are selective sliding gear types having forward speed ratios and reverse. The gearset cases are fitted with breathers to obviate pressure that may cause leakage. The rear section of the driving shaft is coupled to the main shaft of the gearset and the pinion shaft of the worm shaft and worm wheel rear axles, the axles being Timken made save that of the 2½-ton chassis, which is a Wisconsin.

The front axles are heat treated steel drop forging, fitted with heavy steering knuckles, and all axles are equipped with wood artillery type wheels. These are shod with solid tires, the dimensions for each of the chassis in order being 36 by four inches forward and 36 by seven inches rear for the H-1½; 36 by four inches forward and 36 by eight inches rear for the H-2½; 36 by five inches forward and 40 by five inches dual rear for the H-3½; 36 by six inches forward and 40 by six inches dual rear for the H-5, and 36 by six inches forward and 40 by 14 single rear for the H-7.

Frames and Other Units.

The frames are pressed steel channel section, strongly reinforced and gusseted and at the front ends are secured oak bumpers, faced with steel plates, that are fastened to unusually heavy cross members. The frames are suspended on semi-elliptic springs, the driving and braking stresses being taken by radius rods, the rear springs being shackled at both ends.

The steering columns are at the left sides of the chassis, being bolted to the frames. By loosening two bolts the bearing caps may be taken off and drop arm shafts may be removed and the columns lifted clear. The steering linkage is very heavy and may be adjusted for compensating wear.

The control is conventional, by foot pedals for the clutch and service brake, hand levers for the fuel and ignition current, hand levers for the emergency brake and changing gear ratios. The brakes are both internal expanding, operating in large drums on the rear wheels.

The equipment includes driver's seat, front fenders and running boards, oil dash and tail lamps, mechanical horn, hub odometer, jack, tools and tool box.

Toledo, O., will vote Aug. 10 on a proposal to establish a bus line in that city which will supplant trolley service in any emergency. The measure will carry an appropriation of \$2,000,000. Its approval by the voters is regarded as a certainty.

Truck Reliability Tour Postponed Until Fall

June 14 has come and gone and the First National Motor Truck Reliability Contest is yet to be held.

While the event has been postponed indefinitely, it is possible that it may be staged in the fall.

The freight blockade—responsible for most of the country's ills—also knocked the plans of the promoters of the big run in the head. The material situation was the chief factor which caused the men behind the movement to declare the event off, rightly judging that this step would be for the best interest of all concerned.

The contest was to be run out of Omaha, Neb., starting Monday, June 14, for a distance of 2500 miles, and was to circle the Money Belt of the Middle West, winding up some time in July. The Omaha Bee, which underwrote the event, and General Manager Charles P. Root, worked union hours and over time for its success, and with conditions breaking right would have achieved a triumph for the industry.

Manufacturers of motor trucks and passenger cars are constantly finding themselves unable to complete the construction of various units, owing to the inability of parts manufacturers to deliver goods. Eastern manufacturers would be unable to get their trucks to Omaha in time for the starting day because of the freight tie-up. It would be unfair to ask them to drive their machines overland 1000 miles or more. It was therefore deemed best to put off the contest until such time as all can get away from the mark together, tuned to the minute and each ready to show the best in his kit.

CHICAGO'S BUILDING PROGRAMME SAVED BY TRUCKS.

Trucks have averted a tie-up in Chicago's building programme this spring by hauling great quantities of cement to that city from the Buffington, Ind., plant of the Universal Portland Cement Co. During February 116,000 pounds and in March nearly 100,000 pounds were transported from Buffington by truck.

NEW ORLEANS TO DISPOSE OF GARBAGE BY MOTOR.

The city of New Orleans is making ready to motorize its equipment for garbage disposal through the purchase of trucks and trailers. These should have a capacity of three to four tons, or six to eight cubic yards of mixed refuse.

DENBYS ON BIG MAIL JOB.

A fleet of 35 Denby trucks, equipped with standard government mail bodies, work 16 hours a day in caring for the demands of the postoffice department at San Francisco.

CITIZENS COMMITTEE FIGHTS N. Y. UNION TRUCKMEN.

Charging that union truckmen are interfering with the free movement of goods in New York city, the commercial interests have formed a Citizens' Transportation Committee, on which is represented six big business, industrial and transportation organizations. It is planned to have a permanent association which can be called upon at any time to protect the interests of the public. It is hoped in time to be a factor in reducing the cost of living.

An official said:

"Millions of dollars worth of produce have rotted on our piers because it could not be moved. Millions of dollars worth have gone to waste in southern fields. We are on the verge of a famine of flour which may deprive the city of bread. This throttling process must cease. The city is tired of being held up by squabbles between employers and employees. We do not care how they settle their difficulties, but we object to being punished for them."

Secretary J. C. Lincoln of the committee stated that merchants who employed non-union truckmen have been threatened. Some have been blacklisted and their men called out. The steamship lines have been warned not to handle their freight.

NASH TRUCK ON GOODYEARS IN RECORD CLIMB.

Moving picture operators cranked their cameras as a Nash quad truck, equipped with Goodyear pneumatic tires, mounted an eight-foot wall of bricks and dirt and reached terra firma from an excavation made for the basement of the new Y. M. C. A. building at Columbus, O., recently. Hundreds of spectators applauded the spectacular feat.

The four-wheeled drive truck slowly but surely made its way over the immense pile of debris, its tires giving magnificent traction as they gripped the irregular terrain. Trucks shod with solid tires had previously tried the stunt in vain, an army caterpillar tank being the only machine able to turn the trick.

WILL ELIMINATE MUFFLER CUT- OUTS ON TRUCKS.

The elimination of muffler cutouts on motor trucks was unanimously favored at a meeting of representatives of the motor truck industry. It was agreed that the cutouts are objectionable to the public and are no longer needed in the operation of trucks. Most passenger cars have already tabooed cutouts.

BIG STREET FLUSHER MOUNTED ON DENBY CHASSIS.

The city of Windsor, Ont., has purchased a Denby five-ton chassis and has had a 1000 gallon street flusher mounted thereon. The city bought the equipment from the Morton Motor Car Co., Denby dealers in Windsor, who report a big call for Denbys in Canada.

NEW DISTRIBUTORS AND AGENCIES

TRUCK SALESROOMS SEPARATE FROM CAR DEPARTMENT.

The truck and passenger departments of the Citizens Motor Car Co., Cincinnati, O., are to be entirely separated. The new sales department for both new and used Packard and International trucks will be at 42-44 West McMicken avenue. The service department for trucks, however, will remain for the present at the company's main building, Seventh and Main streets, where Packard and Overland passenger cars are distributed.

GARAGE TO HOUSE 125 MACKS.

One of the largest truck garages outside of New York city is ready to be opened at Albany, N. Y., by the Mack International Truck Corporation. A service station for Mack trucks will also be maintained. The building is at the corner of Ontario and Bradford streets and has 20,000 feet of floor space and a capacity of 125 trucks.

HANDLES SELDENS IN BUFFALO.

The Selden Truck Corporation, Rochester, N. Y., has engaged the L. G. Schoeflin Co., which formerly handled Stewart trucks in Buffalo, to distribute its product in Buffalo and western New York.

NEW HUFFMAN SALESROOMS.

The United Sales Co. has engaged the garage, show room and service station at 4834 Market street, West Philadelphia, as its headquarters for the distribution of Huffman trucks and cars. The building contains about 12,000 square feet.

NEW DEFIANCE SALESROOM.

The Virginia-Tennessee Motor Truck Corporation, Bristol, Tenn., has engaged new and commodious quarters where a service and repair department for Defiance trucks will be featured.

TO HANDLE WINTER.

The Automotive Sales and Service Co., Fond du Lac, Wis., of which Simon C. Schaefer is president and manager, will distribute the Winther truck in 35 counties of Wisconsin.

NEW POST FOR BARROWS.

Thomas Barrows, Jr., manager of the truck tire department of the United States Tire Co., Philadelphia, has been named as manager in the Philadelphia district for the Gillette Tire Co.

ARMLEDERS IN BUFFALO.

The distribution of the Armleder truck in Buffalo, N. Y., has been placed in the hands of Frank A. Lobee & Son.

NEW U. S. TRUCK DEALERS.

The United States Motor Truck Co., Cincinnati, O., has recently made a number of important dealer connections, as follows:

Beeandey Automotive Co., Greenville, Miss.

Southern Sales Corporation, Chattanooga, Tenn., distributors in territory which includes portions of Tennessee, Alabama and Georgia.

Christ. Wunderlich, Evansville, Ind.

The Auto Inn Garage, Effingham, Ill.

The Koloniale Automobielen Maatschappij, Batavia, Dutch East Indies, distributors for Java, Dutch East Indies and Sumatra.

Smith & Clark, Wilkes Barre, Pa.

U. S. Motor Sales Co., Knoxville, Tenn.

The Hanyei Trading Co., Tokio, Japan.

J. B. Allen, Hendersonville, N. C.; Columbianna Garage, Columbianna, Ala.; N. F. Allen & Son, Boyle, Miss.

L. H. SMITH RESIGNS.

L. H. Smith, head of the automobile and motor truck sales departments of the J. P. Downes Co., Minneapolis, Minn., and former St. Paul representative for that concern, has resigned and will take a rest of several weeks before making a new connection.

\$100,000 HOUSE TO DISTRIBUTE SELDEN TRUCKS.

The M. O. King Motors Corporation has been formed at Los Angeles with a capital stock of \$100,000 to distribute the Selden truck in southern California.

HANDLING THE HUFFMAN.

The Huffman car and truck will be distributed in Philadelphia by the United Sales Co., which is now occupying its new building, 4830-34 Market street.

WHITE \$100,000 HOME.

The White Auto Co., Milwaukee, distributor of White trucks, is now occupying its new \$100,000 home at Milwaukee and Martin streets.

TO SELL GRAMM-BERNSTEIN.

The Vanderbilt Motor Car Co., successor to the Cascade Motor Sales Co., will hereafter handle Gramm-Bernstein trucks in Seattle.

TRAYLOR TRUCKS AND TRACTORS TO BE SOLD BY KEEGAN.

Traylor trucks and tractors will be distributed in central Pennsylvania by the Keegan Motor Car Co., Harrisburg.

ACME DEALER EXPANDS.

The Acme Truck Sales Co., Akron, O., has increased its capital from \$35,000 to \$125,000.

BIGGER BOSTON QUARTERS FOR GIANT SALE CO.

The Giant Truck Sales and Service Co., Boston, Mass., New England distributor of Giant trucks, has been forced by pressure of business to expand its quarters. Larger executive offices have been secured at 739 Boylston street and a new and fully equipped service station is located at 460 Albany street, where a corps of efficient mechanics is maintained to render every possible service. An emergency truck is on duty ready to make road repairs or do a towing job at a moment's notice.

\$150,000 GMC SALESROOM.

General Motors Company is making ready to build a six-story 100 by 100 foot storage building and salesroom at Dallas, Tex., to be of reinforced brick and steel construction and to cost \$150,000. It will be located at Jackson and Jefferson streets.

SELLING DENBY'S IN TEXAS.

C. C. Sugner, Texas representative of the Denby Motor Truck Co., has been appointed district sales manager for the Texas territory. He will remove his headquarters from San Antonio to Dallas.

GARFORD EXECUTIVE RESIGNS.

Herbert Happersberg, service manager of the New York branch of the Garford Motor Truck Co., has resigned to accept a position as sales manager of the Shinup Products Co.

ARMLEDERS IN TEXAS.

The Armleder Motor Truck Sales Co. of Texas has been formed by E. C. Poole and George S. McGhee for distributing Armleders in that state. Headquarters are in Dallas.

TO DISTRIBUTE WHITE TRUCKS.

White trucks will be handled in Michigan by George E. Yokem, Buick distributor at Port Huron, who will open a sales room in Detroit.

GETS KISSEL FRANCHISE.

The Kissel franchise for distribution rights in Washington and Northern Ohio have been awarded to Frank Waterhouse & Co., Seattle.

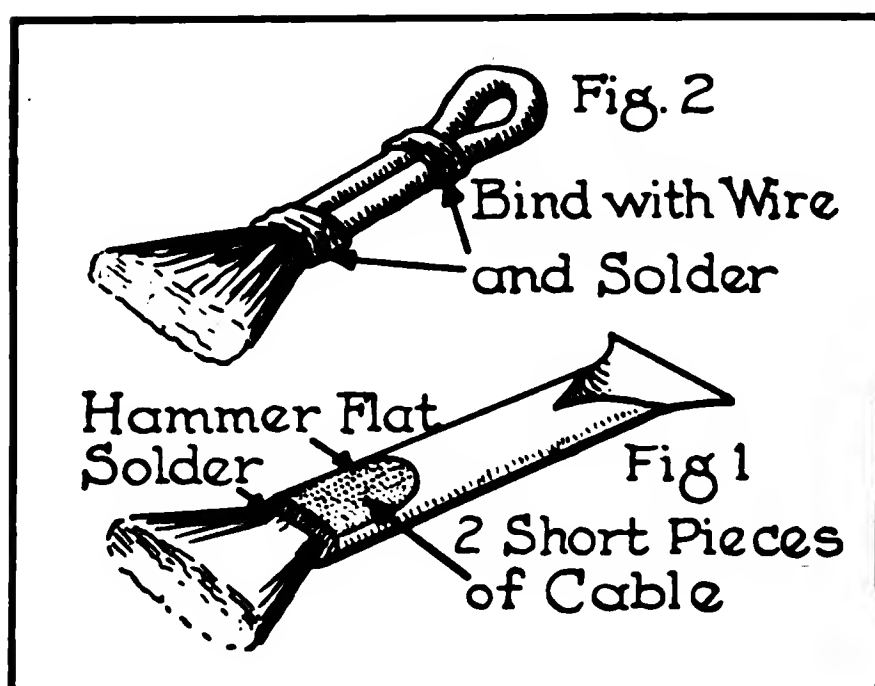
SELLING REPUBLICS IN BOSTON.

The Republic truck will be distributed in Boston, Mass., by the Lebon-Kidd Co., which has a building 75x100 at 983 Commonwealth avenue.

SOME PRACTICAL SHOP ECONOMIES

EASILY MADE WIRE SCRATCH BRUSHES.

Wire scratch brushes for the machine shop prove their worth many times over, when operating a lathe, upright drill, or planer, in brushing away the chips from the cutting tool. Such brushes are difficult to purchase in the open market and are best made in the shop from old sections of wire cable. To make the brush shown at Fig. 1 take two short pieces of wire cable about five inches long. The handle is formed from a piece of brass pipe five or six inches long. The two pieces of wire cable are inserted in one end of the pipe and the end hammered down flat, over the wire. Soldering acid

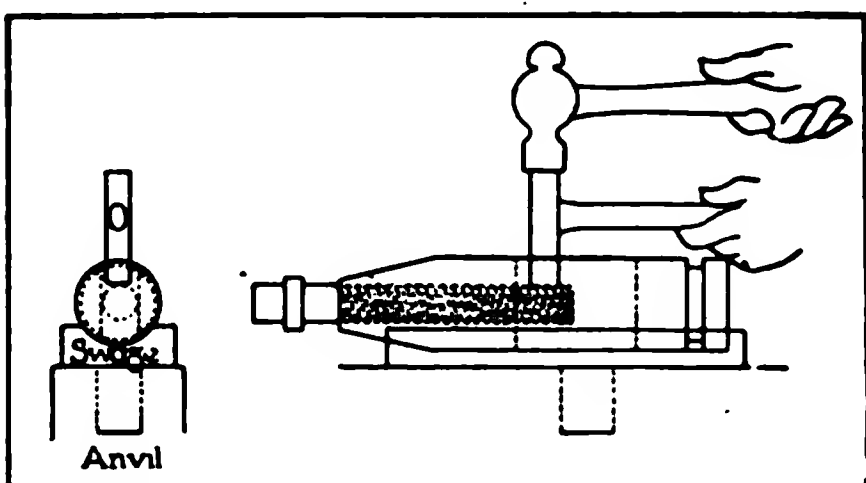


is applied, the ends heated and soldered tight in the flattened pipe. Spread out the wire ends in the form of a brush as shown and hammer down the other end of the pipe, forming a scraper. The scraper is very handy for cleaning away the larger chips.

Fig. 2 shows a second form that is easily made by taking a section of wire cable, doubling it, winding with brass wire and soldering to the cable. Open out the ends fan shape and a very convenient brush is formed.

REMOVING DEFECTIVE TOOL POST SCREWS.

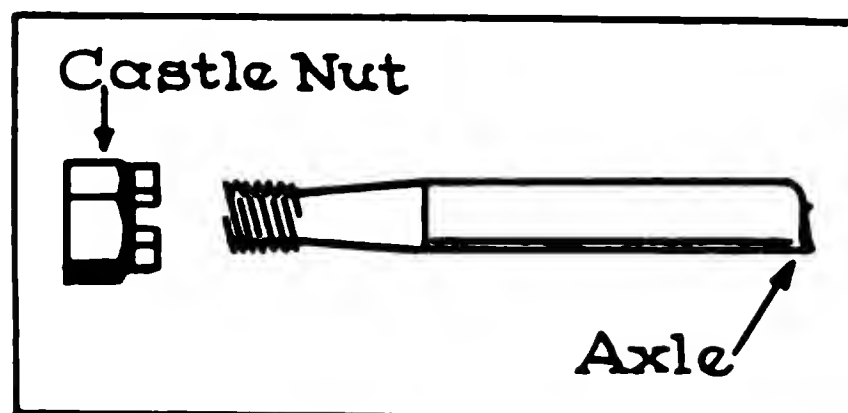
Tool post screws, after considerable use, become burred on the inner end, where they are set up against the cutting tool of the vise, making their removal difficult and in some cases impossible. To remedy this condition, turn the screw in far enough to clear the burred end. Make a square punch the size of the slot of the



tool post and fasten it to a handle. Place the tool post on a swedge on the anvil, rest the punch on the end of the screw and with a heavy hammer strike a succession of blows on the top of the punch with the hammer. The end of the screw will break off clean and can be easily removed from the post.

STRAIGHTENING BURRED THREADS ON AXLE.

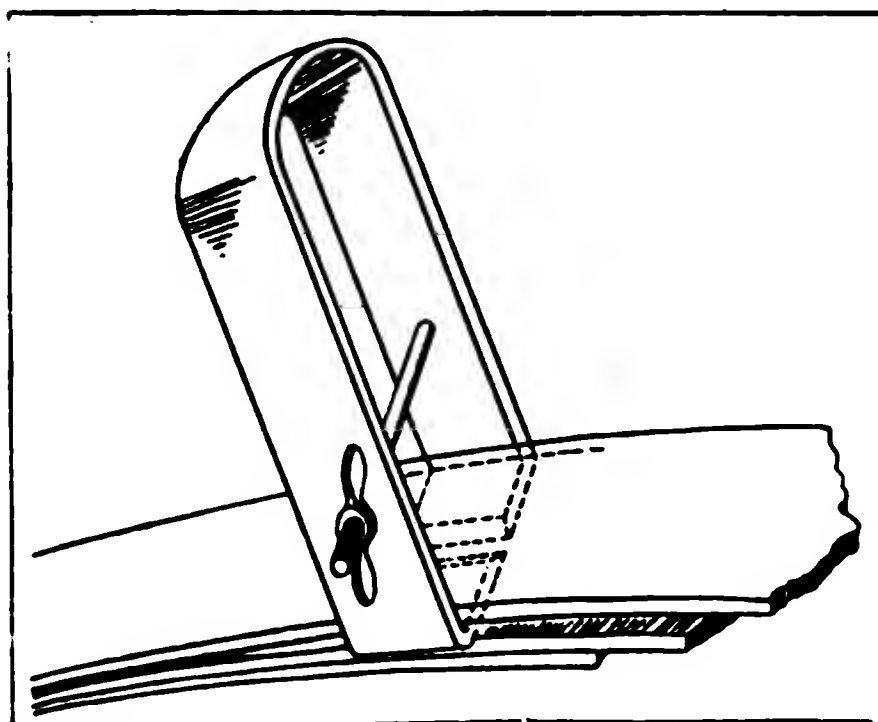
Many times when removing wheels from axles the end threads of the axle will become burred through being hit



with a hammer. To straighten them again reverse the castellated nut, screwing it on to the axle threads. The burred threads will offer considerable resistance, but a fairly good job will result, as the castles of the nut allow the chips and pieces of metal from the thread to drop out, while the solid thread of the nut follows and forms the perfect thread.

SPRING LEAF LUBRICATION.

Many handy devices are made and placed on the market to make the opening of spring leaves much easier. A device shown in the illustration can be easily made from a piece of flat stock picked up around the garage and bent into the shape of a letter "U." The ends are turned in at the bottom and sharpened on the ends to allow for insertion between the leaves, and a bolt and thumb



screw provided, to draw the ends under the leaf. With a device of this nature supplying the spring leaves with lubrication is made much easier. It is preferable to the end-cut nippers or pincers, which are sometimes used for opening the leaves.

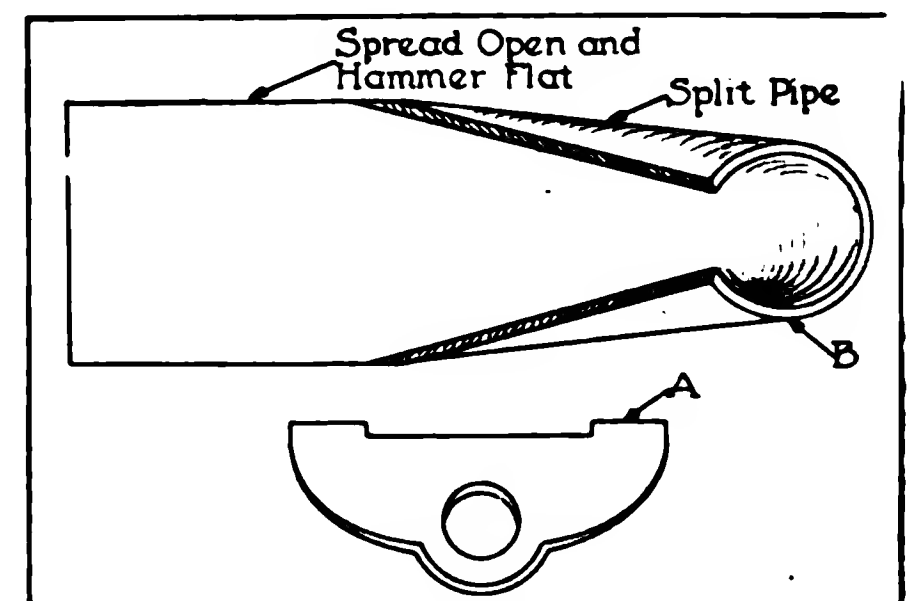
As to the proper lubricant, there is something much better than oil which may be placed between the leaves of the spring. This is a mixture composed of beeswax and graphite. The beeswax should be melted and the graphite stirred in hot. If desirable, oil may be used to make the mixture more plastic, especially in cold weather, when kerosene or any of the non-drying oils may be used with beeswax.

With the springs well coated with the beeswax-graphite mixture, there will never be a squeak or a rust spot. It will be found in many instances that the care-

ful placing of grease between the leaves of springs, especially of the large sizes, will cause them to work much more quickly. In other words, they will act and recover more quickly when well lubricated, than when dirty and rusty. Particularly when absorbers are used should the springs be kept well lubricated in order that full benefit of the action of the shock absorbers may be gained.

CUTTING SHIMS.

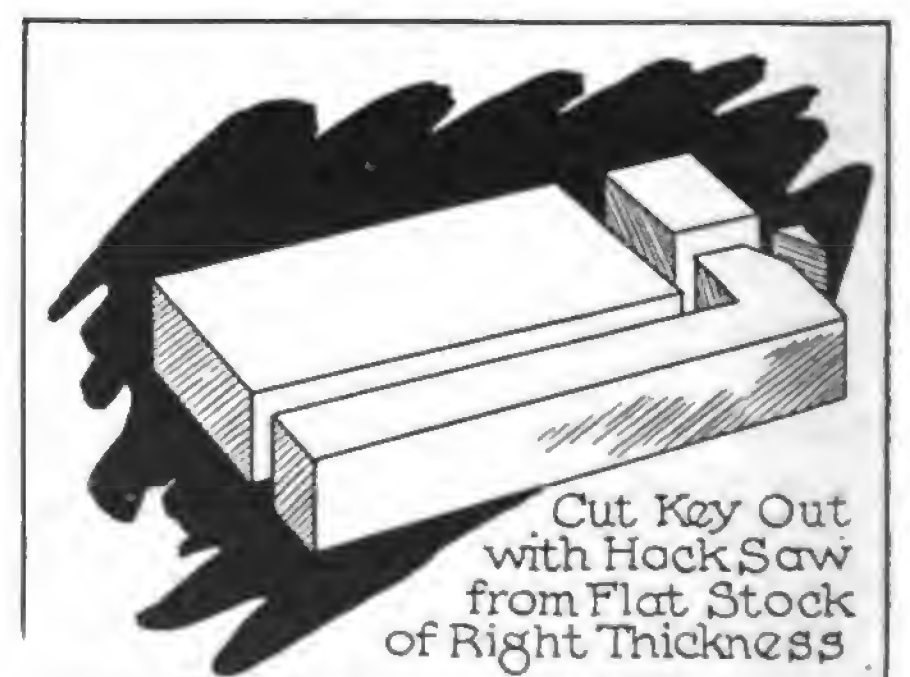
In case of emergency, shim stock can be made from copper or brass tubing as shown in the illustration. Take a piece of tubing, diameter of bore of which corresponds to the length required for the shim, place in a vise and split



lengthwise with a hack saw. Remove from the vise, place on the bench and carefully work the tube open at the cut B, hammering flat on a hard surface to remove unevenness in the metal. To form the shim, crease the strip of metal over the edge of the vise jaw, bend back, hammering flat, making two thicknesses of metal. The shim may now be cut to shape with tinning shears and a punch, filing the edge with a file as shown at A.

CUTTING KEYS.

When cutting keys for keyways in shaft and pulleys, the usual custom is to find the proper thickness of stock, file to fit the keyway and drive it home. A simpler way to form the key is shown in the illustration, which can be done in almost any shop as flat stock is used, care, however, being taken to get the



correct thickness. The illustration is self-explanatory and shows how the key may be formed with the least amount of cutting. The key should be filed smooth before being placed in the keyway.

BERDON GAS-VELOCITY GOVERNOR

An engine governor for which extremely broad claims for efficiency are made is being produced commercially by the Berdon Mfg. Co., Detroit, which is designed especially for heavy truck duty and tractor service, and statement is made that this is not only a governor in the usual engineering sense, but it also increases the value of the fuel because it creates a more combustible mixture.

The governor is what is known as a gas velocity type, and simplicity of construction, durability and close regulation are qualities that are emphasized by the manufacturer as having been established from recognized engineering standards.

The governor is stated to be absolutely automatic in action, for neither driving gears nor shafts are used. It consists primarily of a housing and a throttle assembly. This housing is a two-section casting, each section flanged so that when assembled it may be installed between the carburetor and the intake manifold of the engine.

Referring to the illustration one will note that the sections are fitted together with four small bolts, and that by removing these bolts the sections may be separated, exposing the throttle assembly, which is a unit mounted in a ring that is seated in a groove formed by recessing the flanges.

This unit is the only moving part of the governor, serving both as the control and throttle. It is mounted carefully in a large steel ball bearing that is com-

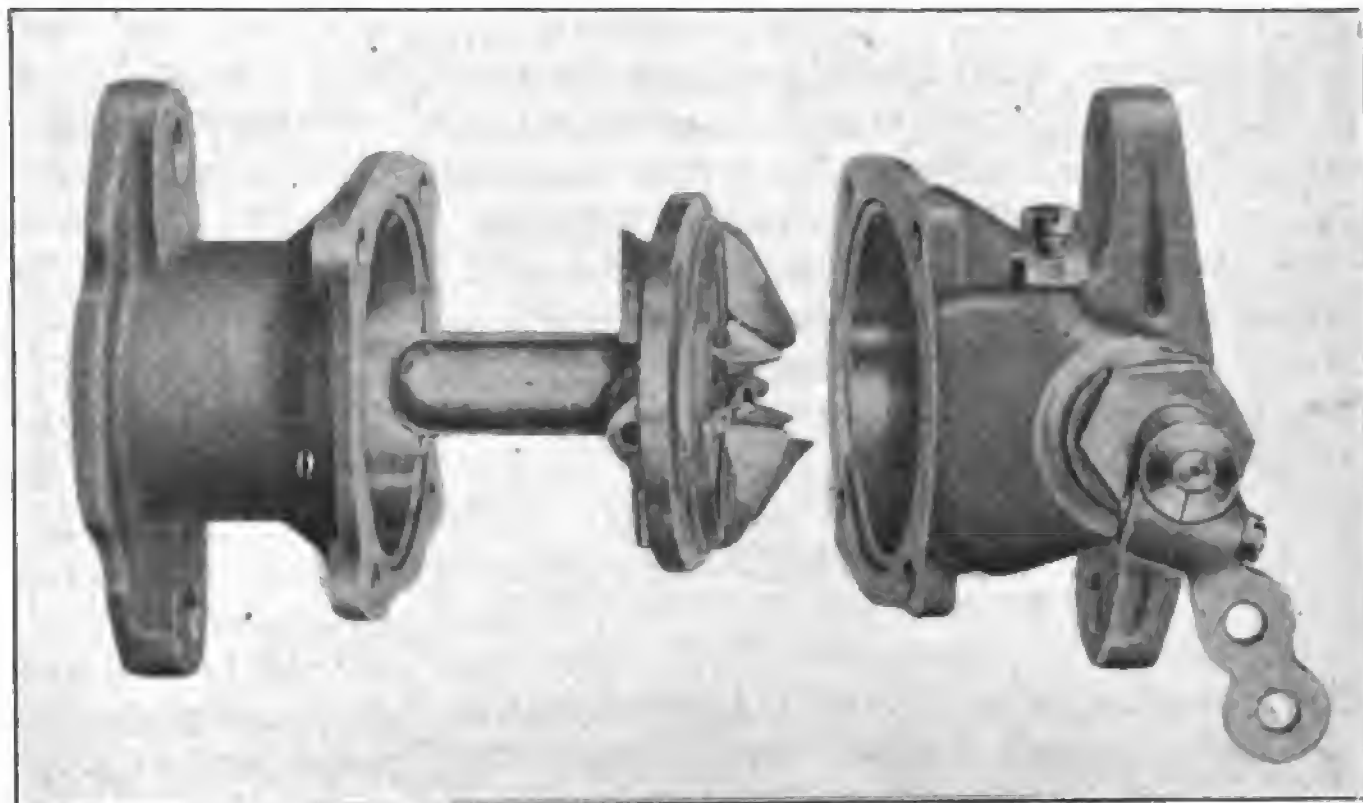
pletely housed and is permanently lubricated. Instead of the conventional butterfly throttle valve, an oscillating disc and grip type of throttle is utilized, in which there are four symmetrical openings.

The throttle assembly is extremely light and perfectly balanced, so that there is practically no friction, and the governor will function with and compensate for the slightest change in the engine loads. Claim is made that maximum power is developed at the governed speed of the engine. Further, that as the oscillating and the stationary members of the throttle valve are never in contact while the governor is functioning, there can be no sticking, as is frequently experienced with other types of instruments.

Because of the fact that there are no obstructions in the gas passages no loss of engine power can result. The construction insures improved combustion as the fuel entering the engine manifold is more thoroughly mixed and is more combustible, so there is greater economy of

fuel and smoother carburetion with rapidly changing loads. Instead of loss an increase of power is sometimes noted because of the improved quality of the fuel.

The instrument is manufactured with much care and precision methods and close inspections insure what is claimed



Berdon Governor with the Housing Separated to Show the Throttle Assembly—the Only Moving Part—and the Absence of Driving Shafts and Gears.

to be unusual responsiveness. Because of the design the governor is not susceptible to wear from conventional causes and as it is completely housed and permanently lubricated there is no reason for variance from the established setting, nor is there probability of wear being evidenced after long periods of use.

AUTO BUS WITH EIGHT WHEELS TO CARRY 100 PEOPLE.

The Goodyear Tire & Rubber Co. is designing a pay-as-you enter auto bus patterned after the newer type of street cars and capable of carrying 100 people. It is being built as an experiment in broadening the field for the use of pneumatic truck tires. It will be operated in Akron and will have six wheels. It is planned to later equip it with eight wheels similar to the double trucks on street cars.

BALTIMORE HAS NEW PLAN FOR RECEIVING BIDS.

The words "or equal" is to be used henceforth by the city of Baltimore in advertising for bids for trucks and other power machinery. The city found that oftentimes the highest bidder would be the only one able to meet the specifications in every detail, while machines that would serve equally were offered at half the top price.

NEW FACTORY FOR NORTHWIND SPARK PLUGS.

The Northwind Spark Plug Corp. has taken over the production on commercial scale of the Northwind spark plug and has established a plant in Union Hill, N. J. Shipments from the new plant began May 10.

New Franklin Truck Has Reached Road Test Stage

The first experimental Franklin truck is out and is ready for a severe road test, Chief Engineer James L. Yarian of the Motor Truck division of the H. H. Franklin Mfg. Co., Syracuse, N. Y., announces.

Many of the popular Franklin features, including light weight, a laminated wood sill and air cooling are incorporated in this 1-ton truck. Pneumatic tires are used exclusively and, under full load, this truck will easily make 25 to 30 miles an hour. A range of bodies will meet the requirements of various classes of trade, to which a truck of this capacity and speed will strongly appeal.

The rear axle is exceptionally light, although of rugged construction and with full allowances for the proper measure of safety. When the truck goes into production the axle complete will weigh less than 200 pounds, which will be from 350 to 700 pounds lighter than that used on any other one-ton truck. This remarkable saving in unsprung weight is sure to be reflected in long life to the tires.

All of the units of the new truck were designed by Franklin engineers and will be manufactured in the new Franklin truck plant. The engine and chassis have been completed for over three

weeks. The engine has been on the dynamometer test for more than two weeks and has met expectation in the way of horse power and torque.

PNEUMATIC SHOD TRUCK BEATS 16 MILES HOURLY.

A pneumatic tire equipped truck makes the round trip every day between Milwaukee and Chicago, a distance of 196 miles, in less than 12 hours, including loading, unloading and reloading. This is better than 16 miles an hour and shows that the slogans, "Speed up with Pneumatics" and "Truck by Air" are timely. Surprising savings in operating and maintenance costs for this truck are also reported.

BAR BUSES IN SCRANTON.

The Public Service Commission has denied the request of the Commonwealth Transportation Co. to operate bus lines on six routes in Scranton, Pa. The commission holds that this service would menace the trolley lines, which are needed by the public.

The standardization of truck hubs was furthered at a meeting of 15 manufacturers of metal wheels at Buffalo, N. Y., last month. Another meeting will be held June 6, when some definite action is promised.

TRUCK SHOWS AND DEMONSTRATIONS

MILWAUKEE TRUCK TOUR STARTS JUNE 28.

Because of the backward season on the farms the motor truck demonstration planned in Wisconsin by the Milwaukee Sentinel has been postponed from the week of June 20 to that of June 27. The tourists will leave Milwaukee June 28 and return July 3. Demonstrations of crop haulage are made possible by the postponement. The trip is made for the purpose of promoting the wider use of the motor truck in business and farming. None but pneumatic equipped trucks will make the trip, which has no competitive features. The Milwaukee Automotive Dealers' association is in active charge of arrangements.

DELCO LIGHTING SYSTEM ON TRUCK TOUR.

A novel feature of the \$135,000 caravan of motor trucks which toured Indiana this month was a Delco farm lighting system, which was used to illuminate the caravan at night at the stops where there were concerts and speaking. The trip told the lesson of truck economy in farm transportation. Demonstrations were intended to prove that pneumatic tired trucks work as well in the fields as on the roads.

TRUCKS AND TRACTORS SHOWN AT CHICO, CAL.

Northern California's first annual automobile show at Chico had 24 trucks and nearly as many tractors on display. There were 50 makes of cars and a score more of models. Dealers were so enthusiastic over the success of the event that a show will be held every year, either earlier in the spring or in the late winter.

SHOW AT NORTH DAKOTA.

The truck dealers of Wahpeton, N. D., put on their annual automobile, truck and tractor show June 7-9, and it was a success from every standpoint. There was a large display of the various machines and big crowds were present each day. The event was in charge of W. W. Thomas, Frank Schmitt and Lud Anderson.

SOUTH CAROLINA TOUR.

The Columbia Automotive Trades Association, Columbia, S. C., held a "Motorize the Farm" tour the week of June 13, which accomplished the purpose of showing the folks in the rural districts what the truck can do for the farmer. The tour covered 22 towns and villages around Columbia.

NEW TIRE SALES MANAGER.

A. H. McIntyre, manager of the Fulton Truck Co., Boston, has resigned to accept the post as sales manager of the Reliance Tire & Rubber Co., Keyport, N. J.

Dealers Start Fleet From Buffalo for 600-Mile Tour

One of the largest fleets of farm demonstration trucks ever assembled outside of a metropolitan show left Buffalo, N. Y., June 14, for a 600-mile tour of the surrounding agricultural territory, to continue a period of two weeks. More than 60 men, including a large representation of the Buffalo Motor Truck Dealers' association, and a band of 20 pieces, were included in the party.

The trucks will go into the fields and orchards and show the farmer just what trucks can do under actual working conditions. Demonstrations to prove the saving of time, labor and expense involved in the use of trucks will be made at every stop. Agricultural experts, who know farming from every angle, will deliver addresses.

As a number of the points to be reached cannot accommodate such a large gathering, tents were taken along for camping purposes. This equipment is sent ahead in a truck and is to be set up in each instance when the motorcade arrives.

The committee from the association in charge of the tour comprised Millard Dorntge, chairman; J. Blair Clark, Harry M. Damon and H. Hullzier. Mr. Clark went over the route ahead of time and made arrangements for the reception of the tourists.

TRUCK ROUTES IN TEXAS.

Recent motor truck runs in Texas proved the availability of this method of transportation under all kinds of condition of weather and roads. Tours were from Dallas, Fort Worth, Wichita Falls and Amarillo. The wonderful work done with trucks in all manner of handicaps strikingly taught the value of machines for commercial purposes. Regular lines of trucks are now running on schedule from Dallas, Fort Worth, Austin, San Antonio, Houston and other cities.

TEXAS DEALERS AT DETROIT.

The Detroit Automobile Dealers' association recently brought as guests to the various factories 125 Texas automobile dealers. The party included practically all the dealers of Fort Worth and vicinity. The visitors stressed the importance of Fort Worth as the distributing center for the southwest. They were entertained at luncheon by the Board of Commerce.

TRUCK OWNERS TO MEET.

The National Team and Motor Truck Owners' association will hold its annual convention at the La Salle hotel, Chicago, June 28, 29 and 30.

N. A. C. C. OFFERS AID IN FARMING SERVICE ASSOCIATIONS.

To avoid the movement to establish local service associations throughout the country the Service Department of the National Automobile Chamber of Commerce, Inc., is preparing a service association manual which explains the objects of these associations, the history of those already formed, with suggestions as to methods of organization and a typical form of constitution and by-laws. Printed copies will soon be ready to send to all interested and the department would be glad to get the names of live wires who would be willing to do missionary work in their localities.

MANY ELECTRIC TRUCKS AT NEW YORK SHOW OCT. 6-16.

The Onelda Truck Co., The Commercial Truck Co. of America, The Landsden Co., The Walker Vehicle Co., the Baker-R. & L. Co. and the Ward Motor Vehicle Co. are among the manufacturers of electric trucks which will have exhibits at the New York Electrical Exposition to be held at the Grand Central Palace, New York City, Oct. 6-16. The electrical vehicles will be grouped on the 47th street side of the second floor and this section will take on the aspect of an automobile show. The absence of a truck show this fall gives added importance to this electric vehicle exhibit.

MOBILE SHOE REPAIR SHOP.

A fully equipped mobile shoe repair shop recently traveled from Beverly, Mass., to Washington, where it was inspected by army officers for possible adoption for use by the army. The truck carried all the necessary machinery to remake shoes at the rate of 800 pairs a day. Goodyear stitcher, nailer, scouring and finishing wheels were connected by a separate motor. Demonstrations given along the road attracted earnest attention.

FILM TO SHOW SALES JOB.

The New York Automobile Dealers' association, through its executive secretary, Harry T. Gardner, is making ready to produce a moving picture film showing the right and wrong methods of selling a car or truck. This will be released to dealers associations, individual dealer organizations, show committees, etc., throughout the country.

CINCINNATI FARM TOUR.

The Cincinnati Truck Dealers' association will start truck and farm demonstration tour June 21 with from 20 to 30 trucks, all owned by the 19 members of the association. No sales will be attempted during the tour, which will take in a radius of 100 miles, covering territory in southern Ohio, southern Indiana and northern Kentucky.

FRUEHAUF AUTOMATIC FIFTH WHEEL

AN AUTOMATIC fifth wheel and adjustable support for semi-trailer bodies is now produced by the Fruehauf Trailer Co., Detroit, which is claimed to have exclusive qualities that recommend it as equipment for those who use tractor and semi-trailer units. One of the main objects sought by manufacturers of semi-trailer bodies has been means of adequately mounting the forward ends upon tractors so that there shall be positive draft and certain stability, so designed that coupling and uncoupling the bodies may be done in the shortest time possible and with minimum time and labor.

Claim is made by the Fruehauf company that with this type of equipment a tractor can be coupled to or uncoupled from a semi-trailer body in less than a minute without physical labor, and the couple will be positive. By this is meant that the driver of a tractor can pick up or drop a unit immediately, the only necessity being raising or lowering the support, which is pivoted on the trailer body and actuated by a quick-acting screw operated by a hand crank mounted at the side of the body.

A New Type of Fifth Wheel.

The fifth wheel consists of two sections, the upper part being a large circle or flat ring with a wide cross member, and in the center of the cross member is mounted at right angle a large stub, on the end of which is a wide flange. This circle is bolted to the frame of the semi-trailer with the cross member longitudinal. The lower section of the unit is mounted on cross members on the rear

of the tractor frame. This consists of a plate approximately the diameter of the circle, a casting, with a fishtail extension, with a channel extending to the center. The channel is widest at the end of the fishtail and decreases to a point near the center, where it has uniform width.

On the sides of this plate are two heavy bosses that are bored for shafts. The outer ends of the shafts are mounted on two yokes, the arm ends having heavy helical springs between them and slidable on longitudinal shafts carried between brackets on the frame cross members. The springs are in effect buffers that absorb the starting, stopping and braking stresses, the yokes supporting the lower section sliding on the shafts and the springs compressing in ratio to the load.

Compensates All Stresses.

The lower section may be rocked transversely on the stub shafts, compensating for the movement of the tractor and trailer because of the inequalities of the highway surface. When the two sections are coupled the tractor is backed beneath the forward end of the semi-trailer, the lower section being at an angle, as shown in the No. 1 illustration. The flanged stub on the upper section is carried through the fishtail channel to the center of the lower section, the weight of the body forcing the plate to approximately a horizontal position on the shafts, where it contacts equally with the circle. The coupling is then completed by the action of a drop forged lever arm that is pivoted at a point just off the center of the lower plate, which automatically locks by

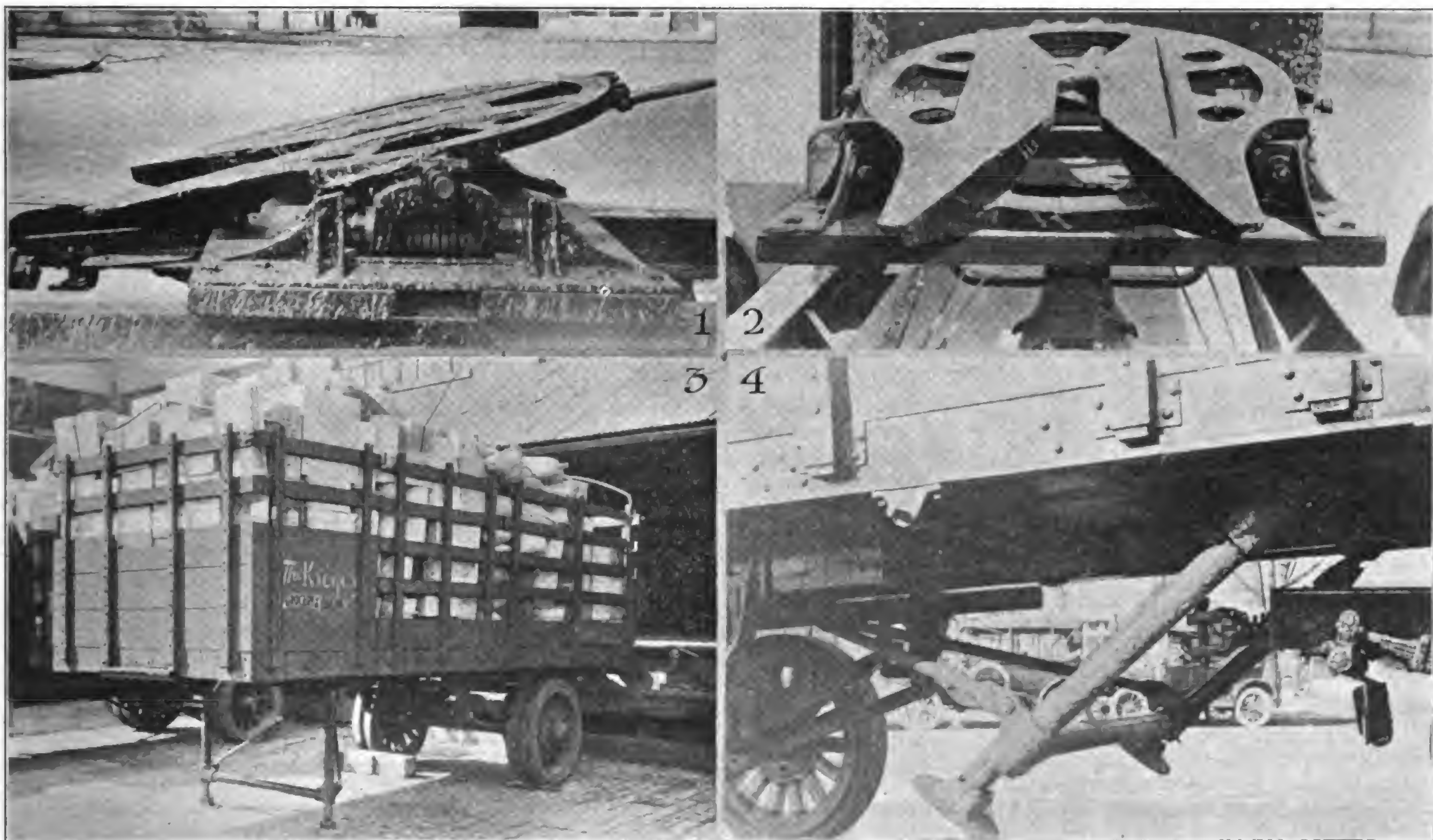
throwing a dog at the outer edge of the plate from the contact of the stub or king pin. The position of the lower plate is such that the movement of the tractor is gradually retarded when coupling is made, and all shock is absorbed by the buffer springs.

These fifth wheels are substantially built, the lower plate and side yokes of cast steel, and they will endure extremely heavy strains. The 30-inch size weighs somewhat less than 300 pounds, and the 24-inch size about 250 pounds.

The Trailer Body Support.

The body support, which is shown in two of the illustrations, is constructed of steel tube and cast steel brackets. It consists of two vertical members with a tie rod between them, the frame being rigid. The upper ends of the vertical members are pivoted in brackets on the trailer body frame, and at the lower ends are steel bases mounted on ball and socket joints, with adjusting screws so the lengths may be increased or decreased to reach an uneven surface. At the ends of the tie rod are two brackets into which the ends of a wishbone radius rod are fitted, and the other end of the rod is a fitting against which a long quick acting screw rod bears. As the rod is turned by a hand crank the fitting is forced backward and the support is swung clear to any desired height.

When the trailer is positioned to be loaded the support is lowered and it will remain until it is ready to be moved. Backing the tractor under the trailer does not require especially careful work by the driver.



Fruehauf Semi-Trailer Fifth Wheel and Body Support: 1, Side View of Fifth Wheel in Normal Position When Uncoupled; 2, Rear View, Showing Fishtail Guide for King Pin; 3, Semi-Trailer Body Loaded on Support; 4, Support Lifted After Coupling.

LUEDINGHAUS TWO-TON TRUCKS

LUEDINGHAUS trucks, built by the Luedinghaus-Espenschied Wagon Co., St. Louis, Mo., are constructed to two-ton capacity only, the company determining that it would concentrate production on a single size until its manufacturing and distributing organizations had been developed.

The company has been engaged for 77 years in manufacturing wagons and claim is made that the vehicles built have been of highest quality. The company's output has been sold in the Middle West and is widely and favorably known. The trucks will be distributed through a sales organization that will include a considerable number who know the value of the trade name of the manufacturer continued with a high grade truck.

Because of the known quality of Luedinghaus vehicles much care was directed to designing the truck, and in it are assembled units made by some of the best known specialists of the automotive industry. The company maintains that all of these have been amply proven by service and the design was developed with the object of obtaining unusual endurance, high efficiency and low operating and maintenance cost.

Constructed of Service Proven Units.

The construction units include Waukesha engines, equipped with Waukesha governors, Schebler carburetors and Splitdorf magnetos, with impulse starters; Borg & Beck dry plate clutches, Detroit Gear & Machine Co.'s transmission gearsets, Wisconsin axles and Tuthill springs, and the units unnamed are equally good. The design is not radical, but every detail has been founded on sound engineering. The factors of safety are unusually large, the parts in moving contact have been adequately lubricated and protected, and accessibility with reference to adjustment or repair has been well thought out.

The engine is a four-cylinder, four-cycle, water cooled, L-head type, with cylinder bore of $4\frac{1}{4}$ inches and stroke of $5\frac{1}{4}$ inches, which is rated by the S. A. E. formula at 28.90 horsepower, but which is claimed by the manufacturer to develop much in excess of this rating. The cylinders are cast from semi-steel in pairs, with the water jacket integral and the heads are separate castings. The water chambers are large and provision has been made to have unrestricted flow of water through them and across the tops of the combustion chambers. The cylinders and pistons are tested five times during the machining processes.

Engine Is Extremely Accessible.

The crank case is cast of aluminum alloy in two sections, the upper half having forward and rear extensions that house the timing gearset and form the upper part of the flywheel housing, and two large hand holes covered with quickly removable plates on the left side. The lower section is the crank chamber and the oil reservoir and the bottom of the bell housing. This half can be removed

with the engine in the chassis for adjustment or repair.

The crankshaft is a three-journal type of large diameter, drop forged from a special alloy steel, heat treated and ground and the camshaft is a drop forging with the cams integral, that is case hardened and ground. The timing gears are large, wide faced and helical cut to drive noiselessly. The valves are the usual poppet type made specially with the object of enduring wear.

Engine Cooling and Lubrication.

The engine is cooled by a circulation of water through the cylinder jacket and a built-up type radiator with a cooling section of oversize vertical finned copper tube with cast top and bottom tanks and side columns assembled with bolts, forced by a gear driven centrifugal pump with large brass intake and outlet connections. The radiator is cooled by a draft from an 18-inch fan mounted on a bracket on the forward end of the crank case, the shaft being adjustable to obtain belt tension.

The engine is lubricated by the Waukesha system, which is a combination of force feed and splash, which is circulated by a gear driven pump. Claim is made that this system is automatic and positive at any position or speed. The engine is governed by a Waukesha governor, a gear driven type, that is normally limited to 16 miles an hour, but is adjustable to any other limitation.

The fuel is drawn from an 18-gallon gasoline tank located under the driver's seat through a Schebler carburetor, and the source of the ignition current is a Splitdorf magneto fitted with an impulse starter. The engine is mounted in the chassis frame suspended at three points, the forward end being on a trunnion.

Power Transmission System.

The clutch is a Borg & Beck single plate dry type, the plate being 12 inches diameter. The unit requires little attention, being self-compensating for wear and very easily adjustable. The Detroit transmission gearset is assembled as a unit with the engine and clutch. It is a selective sliding gear type, with shafts and gears of heat treated nickel steel, having three forward speed ratios and reverse.

The drive is by a two-section shaft, having three universal joints, the rear end of the first section being mounted in a self-aligning bearing carried by a heavy frame cross member. The shaft is coupled to the worm shaft of a Wisconsin semi-floating type rear axle, which is housed in a single-piece casting reinforced by heavy ribs. The axle shafts are $2\frac{1}{2}$ inches diameter, drop forged from special alloy steel. The worm shaft and worm wheel are lubricated by a bath of oil in which the wheel revolves and all parts are fully enclosed. The front axle is an oversized steel drop forging, heat treated, with heavy steering knuckles and the spindles are fitted with Timken roller bearings.

The frame is pressed steel channel section, of quarter-inch stock, $6\frac{1}{16}$ inches

wide, with three-inch flanges, and this is reinforced by cross members and gussets. It is suspended on Tuthill Titanic springs, semi-elliptic, of electric furnace alloy steel, the forward set being 42 inches long and $2\frac{1}{2}$ inches wide, and the rear set 54 inches long and three inches wide. The spring eyes are bronze bushed and the bolts are heat treated and ground and fitted with positively lubricated bolts. The driving and braking stresses are taken by steel I section radius rods, pivoted on the spring hangers.

The wheels are wood, artillery type, 12 two-inch spokes forward and 14 $2\frac{1}{4}$ -inch spokes rear, and these are shod with 36 by four-inch solid tires forward and 36 by seven-inch tires rear, or with 36 by six-inch pneumatic tires forward and 40 by eight-inch tires rear. The standard wheelbase is 145 inches, 170 inches optional and 112 inches when the unit is used as a tractor. The tread is 56 inches.

The steering gear is an adjustable worm and nut type, with 20-inch hand wheel located at the left side, with very heavy linkage. The control is conventional, with two brakes operating on the rear wheels, the shoes expanding within drums integral with the wheel hubs, the service set being 17 inches diameter and the emergency set 12 inches diameter, and both sets are $2\frac{1}{2}$ inches wide.

The chassis is equipped with a driver's seat, front fenders and running boards, oil dash and tail lamps, front bumper, Stewart speedometer, horn, jack, tools and tool box.

SINCLAIR OILS MONTHLY.

Sinclair Oils, a magazine published by and for the employees of the Sinclair Refining Co., is one of the finest publications, newsorially, typographically and artistically, that has yet come to view. Pictures of the widely varying activities of the company, cuts of officials, a birdseye view of New York city, showing the concern's Liberty building, cartoons and news from various refineries and divisions, enliven its 50 pages. It teems with philosophy and information and gives the outsider a clear insight into the mammoth tributaries in which the affairs of the company run. In addition to providing newsy gossip for the thousands of employees.

TRUCK AS FURNITURE MOVER.

President G. A. Kissel of the Kissel Motor Car Co. illustrates the advantages of moving furniture by truck through a recent instance where the Turning Moving & Storage Co. of Denver, Col., moved 4000 pounds of goods to Pueblo for \$90. The cost by rail would be \$108.60. The moving was made in a day instead of a week and the entire transaction was consummated without the owner of the furniture turning his hand. What kind of motor truck was used? Ask Mr. Kissel.

PERFECTION TRUCK CAB HEATER

OWNERS of trucks who have to deal directly and constantly with drivers, are very generally agreed that they are best served by men whose comfort and convenience are considered so far as this is practically possible. The consensus of opinion is that the work of drivers as a whole should be made as easy as is consistent with the operating conditions.

By this is meant that a driver is employed to work with a machine ranging in value from \$1000 to \$6000 or more, and the time of the man and the unit are worth from \$15 to \$60 or more a day. When service runs into money very rapidly, and the operating costs are greater now than ever before, there is every reason for increasing the working or useful time and minimizing the idle or unproductive time, and productiveness depends in very large measure upon the energy and the satisfaction of the driver with his work.

Trucks are operated continuously and the owners believe that they make wise investment when they install cabs, with comfortable cushions and windshields, and still others go further and add doors or curtains that will even better protect the drivers. As trucks must of necessity be worked in all weather and the drivers cannot stimulate themselves naturally by activity to resist low temperatures, the next best protection is to fully enclose the cabs, which has resulted in the development of sliding and rolling doors and windows, swinging curtains and other accessories that can be practically utilized.

Heated by Exhaust Gas from Engine.

An equipment that can be adapted to any truck, and which has been proven by years of use with passenger cars, is the Perfection Heater, a device that is connected with the exhaust pipe from the engine and leads the heated gases through a coil of tubing (practically in radiator form) locating in or above the floors of cars, and under a metal shield secured to the floorboards and the riser of the driver's seat for trucks, with means of regulating the volume of gases admitted to the coil.

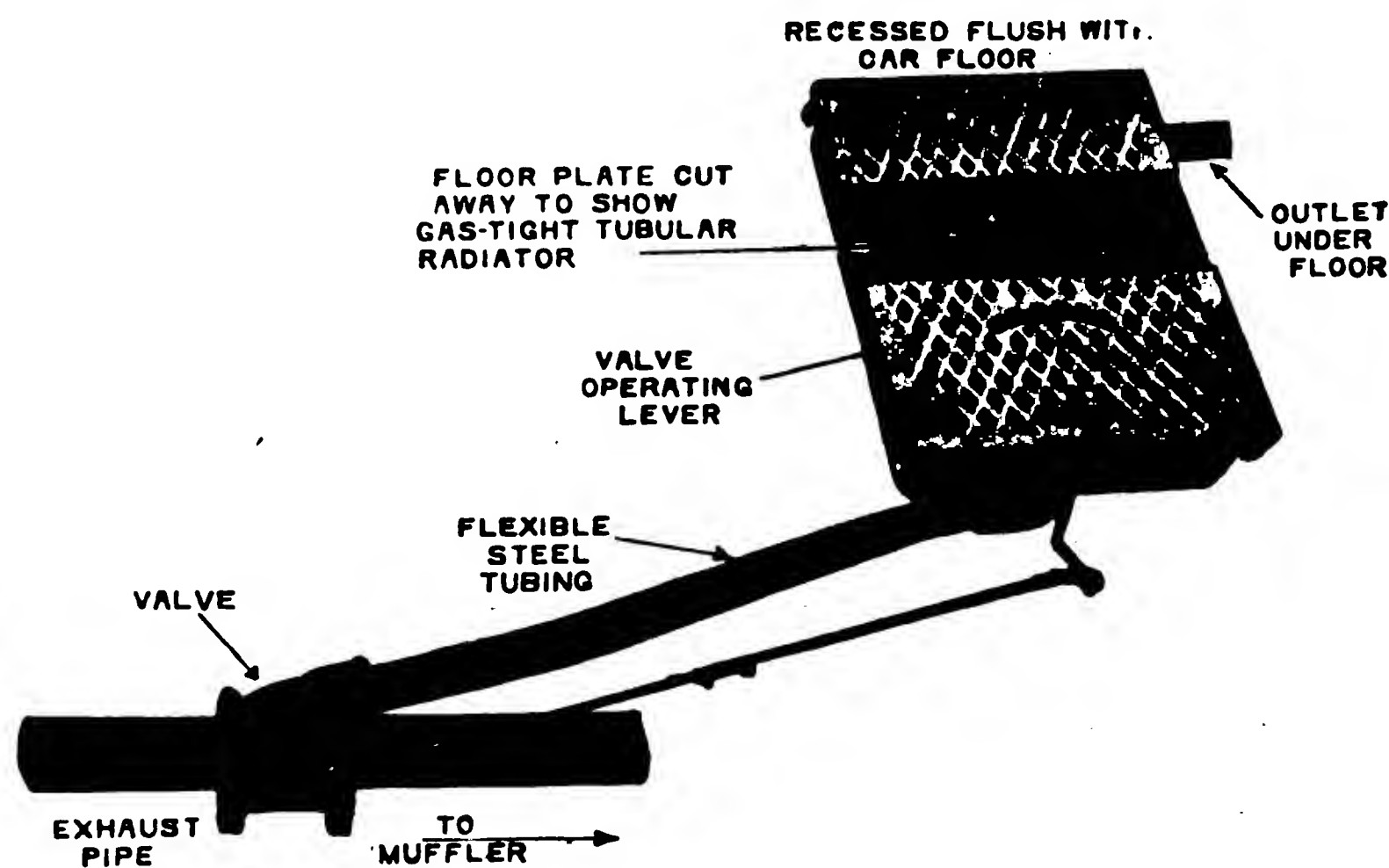
The principle stated will apply to all vehicles, but as the design, construction and the location of the units will differ

with each make of car or truck, the fittings that may be utilized with any given make of machine will differ somewhat from those of another make. The car heaters are regulated by the movement of a knurled wheel or disc under the sole of the shoe and this control has been so developed that the results are exceedingly accurate. The heated exhaust gases pass through the coil of the heating unit or radiator and into the open air and obviously the radiator has efficiency in ratio to the volume of exhaust gas that reaches it.

The accompanying illustration is that of a type A heater, which is designed to

and it may be depressed at will, the circulation of hot gases continuing so long as the pedal is pressed. Upon release of the pedal a spring closes the valve. Obviously the heat radiated from this type of heater is greater than if the coil were under the floor. The temperature of the coil is usually in ratio to the load upon the engine, increasing or decreasing with the increase or decrease of gasoline consumed. But this heat can be equalized by opening or closing the regulator valve.

The heaters are extremely well built, the machine work being in many instances to 1/1000 inch and all the fit-



Principle of the Perfection Truck Cab Heater, a Permanent Installation, is Shown in This Illustration. It is So Designed That It May Be Added to the Equipment of Almost Any Power Vehicle.

be installed in a recess in the floorboards of a car or truck, and is shown to illustrate the principle of the heater rather than the type that is designed for and is recommended for trucks. One will note that the radiating coil is carried in a frame that is covered with a metal grid that forms a part of the floor of the vehicle, but in the truck heaters the unit is covered with a curved perforated metal shield, one flange of which is secured to the floor and the other to the seat riser, the radiator being where the heat will rise directly about the body of the driver.

Regulation by a Foot Pedal.

With this type the means of regulation is a heel pedal that rises above the floor

and ings are high grade metal. The regulating valve is specially designed and the lead from the exhaust pipe to the radiating coil is a flexible tube. No exhaust gas is admitted to the cab and heat is radiated immediately after opening the valve. Statement is made that the use of the heater positively reduces back pressure and lessens the consumption of fuel.

Perfection heaters have been used as standard equipment for taxicabs and passenger buses and have been installed in large numbers by truck owners. A considerable number of car and truck manufacturers are furnishing them as standard equipment.

U. S. TRUCKS IN PHILIPPINES, CUBA AND MEXICO.

H. S. Everett, managing head of Teal & Co., distributor of United States trucks in Manila, recently visited the United States factory at Cincinnati, where he waxed enthusiastic over the Philippines as a future truck market. Over 300 are already in use there hauling heavy merchandise, copra and rice. Roads are being rapidly improved, which means more trucks. Every male person over 18 on the island is being taxed to pay for highway improvements. Trucks are sold through demonstrations, most of the buyers being unable to read.

Not only in the Philippines, but in

Cuba and Mexico the United States truck is going strong. Due to the popularity of its product in Cuba the company has sales and service stations at Havana, Santiago de Cuba and six other principal points. In Mexico a United States truck recently won a medal in competition with a large number of other motor vehicles in actual work on Mexican roads.

TRUCK ONLY POSSIBLE AGENCY FOR TRANSPORTATION RELIEF.

The news bureau of the Service Motor Truck Co., Wabash, Ind., fathers the announcement that if all short haul business up to 60 miles were turned over to

the motor truck freight car travel would be increased from 25 to 30 miles a day, which would be the same as adding 600,000 cars to the railroad equipment. Freight congestion would be entirely relieved. The bureau disposes of all other possibilities for relief and shows that the truck is the only agency which can put the transportation facilities of the nation on their feet.

GMC TRUCKS BY BOAT.

On May 17 the Pence Automobile Company of Minneapolis, Minn., received a shipment of 40 GMC trucks by boat from Detroit. This is the first lot and many will follow by the waterway to Duluth.

TRUCK FREIGHT HAULAGE PROJECTS

Sub-Terminal Plan to Cut Railroad Congestion

In discussing the plan adopted by the New Jersey Central railroad of using motor truck service in connection with its Jersey City terminal, by making Plainfield, N. J., a nearby city, a terminal point, whence freights are hauled by trucks to Jersey City and other destination points, R. E. Fulton, vice president of the International Motor Co., manufacturer of Mack trucks, says:

"This idea of diverting shipments, while not a new one, has up to the present been confined to emergency use. It seems logical, however, that the diverting principle presents the most practicable means for permanently relieving the railroads of terminal congestion. By establishing subterminals at the outskirts of large cities on the various lines of approach, freight loads could be transferred to motor trucks and delivered to the consignees far more rapidly and economically than at present.

"This method would also relieve street traffic in the congested parts of large cities because, first, the terminals would then be adapted to use the more rapid and flexible moving motor truck instead of horse drawn equipment; second, the number of vehicles bringing and receiving goods at terminals would be divided in their operations to different parts of the city, and third, the large capacity trucks could be utilized for handling carload lots, thus minimizing the number of vehicles required to handle transfers.

"The motor truck is now a permanent supplement to the railroads and has proved its capacity to take over the short haul traffic that has developed to be time-wasting and unprofitable business for them. By "feeding" short haul shipments to the main line traffic it has released thousands of cars for long distance transportation and has done much toward relieving congestion at terminals. But the development of this cooperative relation between the railroad and the motor truck is still in its infant stages. It is but natural to expect that before long the railroad terminals of this country will be reorganized and adapted to obtain the full benefits of the economies and conveniences offered by the motor truck. The sooner we lend our energies to achieving a possibility instead of throwing up our hands in despair and waiting for a prodigious number of cars to spring up from nowhere, the better the transportation interests of the country will be served."

HAS SEVEN TRUCK ROUTES.

The Associated Truck lines have seven routes radiating from Grand Rapids, Mich., 14 trucks being in service. New routes planned will touch Kalamazoo, Muskegon, Howard City, Cedar Springs, Grand Haven, Otsego and Allegan.

MORE MOTOR TRUCKS LOOKED FOR IN MAIL SERVICE.

The Postoffice Appropriation act, recently enacted into law, authorizes the investigation by a special commission of all present and prospective methods of transporting the mails, the commission to report to Congress with recommendations on or before March 1, 1921. The motor truck industry welcomes this investigation and expects it to mean a much greater employment of trucks in mail service.

The bill appropriates \$1,250,000 to purchase, hire and maintain vehicles, a portion to be used in leasing quarters for the housing of government-owned automobiles. The sum of \$1,250,000 is also provided to expand the aeroplane mail service, and such expansion means the use of many trucks later to transfer the mail from the landing stations to the postoffices.

TRUCKS KEEP WICHITA PLANTS IN FULL OPERATION.

The Wichita Motors Co., Wichita Falls, Tex., is running regular truck service between its two plants at Wichita Falls and Oklahoma City, Okla., a distance of 210 miles, making the trip in 11 to 16 hours. Parts are not only carried from and to these plants, but also to the factory branches at Dallas, San Antonio, Fort Worth and Houston. Trucks have kept both factories in full blast throughout the railroad tieup.

EXPRESS COMPANIES FOR SHORT HAULS BY TRUCK.

Express company experts declare that the growth of the motor truck express business in the last year has helped rather than harmed the express industry. The trucks have taken from the express company a fair part of the burden of short hauls which had been previously handled at a loss. Express men say the long haul business is the one which turns in the profit.

HAULING CLEARING HOUSE.

The Westfield, Mass., Chamber of Commerce is serving as a clearing house between manufacturers and truck men, doing whole heartedly a job which many chambers of commerce are doing mostly in theory. Large signs are placed on all truck lines leading into the city urging drivers seeking a return load to get in touch with the chamber. Manufacturers list their wants with the same body.

BUS LINES NEAR TRENTON.

The Trenton Automotive Collateral Co. has applied for permission to operate bus lines throughout Mercer county, New Jersey, outside the city of Paterson. The Mercer County Tractor Corporation opposes the petition, claiming that it intends to put 40 motor buses in service by July 1.

Wisconsin Factories Ship by Truck to New England

The Wisconsin Manufacturers' association is planning a ship-by-truck system to reach as far as New England. It is hoped to have an elaborate transportation system in effect within a few weeks, all the members appearing enthusiastic over the proposal. The recent trip of a five-ton White truck owned by the Globe Coal Co., Woonsocket, R. I., with 14,000 pounds of dyed yarn from R. Wolfenden & Sons, Attleboro, Mass., to the Bradley Knitting Works, Delavan, Wis., was the first experiment in the movement.

HARTFORD, CONN., TRUCK BRINGS RIMS TO LANSING.

A two-ton Duplex pneumatic tired truck recently made a trip from Hartford, Conn., to the Reo factory at Lansing, Mich., bringing a load of 200 rims to the factory in order that Russell P. Taber, a Hartford dealer, might get 50 trucks he had ordered, but which were held up for lack of rims. A full load of parts was brought back. The trip each way was made in five days.

The total expenses for the total run of 2000 miles was \$140.

TRUCK TRAIN TAKES 85 TONS OF STEEL TO TOLEDO.

The Houghton Elevator Co., Toledo, O., recently got a shipment of 85 tons of steel by truck from New York City. Seventeen trucks left Toledo and each got a five-ton load for the return trip. The entire journey consumed about two weeks. The route was through Cleveland, Akron, Beaver Falls, Pittsburgh, Harrisburg, Reading, Trenton to New York City.

ONE CALL ON SERVICE CAR IN TRIP OF 1200 MILES.

More than 40 cars and trucks comprised the caravan, accompanied by 150 delegates, which made the trip of 1200 miles down the Pacific coast from Seattle, Wash., to Stockton, Cal., to attend the coast convention of advertising men. The schedule did not slip a single cog and all the service car was called on was but once. There were just six blowouts on the entire trip.

FREIGHT AIR SERVICE.

Freight air service is to be offered shortly by the Curtis Aero Motor Corporation, which is negotiating for a 100-acre tract on the Delaware river near Wilmington for an intermediate landing place. This will be in connection with its summer seashore service, which includes Atlantic City, N. J.

NATION'S DEMAND FOR GOOD ROADS

Will Spend Billion For New Highways in Five Years

C. M. Wood, who is in charge of the newly created Good Roads Bureau of the Goodyear Tire & Rubber Co., has compiled statistics showing that the total amount proposed and authorized for road improvement in the United States is \$1,206,895,529. Thirty-seven states have authorized the expenditure of \$635,641,729 in the next five years and bond issues of \$391,253,800 are pending with a likelihood of being passed. Mr. Wood has done some traveling recently and finds enthusiasm for good roads everywhere.

Texas takes the lead in the amount authorized for good roads, with bond issues totaling \$88,708,000; Pennsylvania will spend \$76,217,945, California \$68,435,000, Illinois \$69,152,845, Michigan \$53,100,000, Alabama \$30,000,000, Georgia \$15,375,000 and North Carolina \$13,459,635.

One of the largest single projects is proposed for Illinois, where \$4,463,511 has been authorized for the construction of 150 miles of roads from East St. Louis to the Indiana line as part of a national highway.

A. A. A. BOOSTS GOOD ROADS.

The American Automobile association gave permanent highways a boost at its recent annual meeting. The Townsend bill calling for a national highway system was indorsed. Resolutions were adopted against the curtailment of shipments and machinery necessary for highway work. The completion of connecting links to main line and the proper maintenance of roads already constructed were urged.

DIXIE HIGHWAY OPEN SOON.

The Dixie Highway, providing a through highway between Chicago and Detroit and Florida is expected to be opened as an all-weather road by September.

AGAINST COSTLY ROADS.

John C. Brown, president of the Indiana State Federation of Farmers, and John R. Riggs of that state, formerly assistant secretary of agriculture, have joined in a protest against the spending of money for high priced roads. They claim that the money, the material and the labor might be put to more essential work. They call for the doing of repair work first, arguing that this latter course will allow the farmers to better get their produce to market and their children to school.

FOR BAY STATE HIGHWAYS.

The Massachusetts House of Representatives has passed a bill appropriating \$1,000,000 for the completion of highways already under construction in five western counties. Members from the eastern end of the state, for whose territory funds had already been provided, orated against the measure. One of the strongest arguments brought in favor of the act was that the money will come from motor vehicle fees and will not enter into the state tax.

TOURS HELP BOND ISSUES.

The May Ship-by-Truck tours in Missouri and Louisiana are thought to have been a big boost for good roads, the tourists running against mud trails that cried to heaven for relief. The press painted a picture of the conditions met and the agitation is counted on to help the proposed \$60,000,000 road bond issue in Missouri and the planned \$35,000,000 highway bill in Louisiana.

PAVED ROAD, N. Y. TO TEXAS.

An all-paved highway between New York and Texas within five years is the prediction made by Charles Fowler, state highway commissioner of Texas.

LOAD LIMIT IN ILLINOIS.

The Illinois State Highway Commissioner has issued a ruling limiting the gross weight of loaded motor trucks to 20,000 pounds.

Liberal Aid for Road Work Favored by Republicans

The platform adopted by the Republican party in national convention at Chicago this month touches on transportation and highways as follows:

"We favor liberal appropriations in co-operation with the states for the construction of highways, which will bring about a reduction in transportation costs, better marketing of farm products and improvement in rural postal delivery, as well as meet the needs of military defense.

"In determining the proportion of Federal aid for road construction among the states, the sums lost in taxation to the respective states by the setting apart of large portions of their area as forest reservations should be considered as a controlling factor."

In its plank dealing with the question of agriculture the platform calls for a national inquiry on the coordination of rail, water and motor transportation with adequate facilities for receiving, handling and marketing food.

It was hoped that a good roads plank would be incorporated in the platform after all candidates had gone on record for increased highway construction. The Democratic planks on motor transport and highway development are now awaited. The question of a national system of highways will doubtless come in for discussion during the presidential campaign.

FIXING NEVADA ROADS.

Two shifts are working 24 hours a day to complete a new roadway over the Fallon Sink in Nevada, this particular job being partially financed by the Lincoln Highway association through a contribution of \$100,000 from the General Motors Corporation and \$50,000 from the Willys-Overland Co. This has been one of the worst strips of road between the coasts.



Grades Are a Very Important Factor in Economic Haulage Even When Roads Are Well Surfaced—A Section of the Lincoln Highway Over Tuscarora Mountains That Is a Hard Climb for Heavily Loaded Trucks When Conditions Are Very Favorable.

COOPERATIVE TRUCK USE PROMOTION

350 Road Builders to Arouse Michigan and Canada

Good roads for Michigan and Canada will be soundly boomed by the Michigan Pikes International Tour, which leaves Detroit, July 14, on a three weeks' tour, which will take in a substantial part of Canada. Speakers of national and international prominence will be among the 350 tourists and they will deliver addresses that are counted on to cement the friendship between the two countries, as well as deliver the message of permanent highways. Receptions are planned at every point the travelers will touch. There will be 93 road meetings of 20 minutes or more.

The Michigan Good Roads association, the Ontario Motor league, the Michigan State Council of Motor clubs, the Detroit Automobile Dealers' association, the American Automobile association and the Michigan and Ontario chambers of commerce have joined hands in the enterprise.

In line will be 75 cars, 15 heavy trucks, 16 Ford trucks, the Ford Motor Co.'s band of 55 pieces and the Ford male quartette from the Waterville plant. The party will include 75 good roads advocates from Ontario, 50 from Michigan, including highway officials, and 235 automobile manufacturers, dealers and other Detroit residents.

Among the distinguished tourists will be F. C. Biggs, Ontario minister of public works; J. C. Campbell, Dominion minister of highways; A. G. Batchelder, ex-chairman of the American Automobile association and H. S. Earle, pioneer advocate of good roads for Michigan.

All important cities along the lake fronts will be visited. Evening meetings will be held in the open air. The chief feature of the jaunt will be the mass meeting in Massey hall, Toronto. A banner concert and entertainment programme has been arranged and a capacity audience of 6000 is assured.

PLANS SHOW AT VICKSBURG.

The fourth semi-annual convention of the Louisiana-Mississippi Automotive Trades association will be held at Gulfport, Miss., Oct. 6-7. There is big enthusiasm in the two states and a banner attendance is anticipated. Among the matters discussed by the association is the holding of an automobile show at Vicksburg late this fall or in the early spring.

PURCHASING AGENTS TO MEET.

A meeting of the purchasing agents of the automobile industry will be held at Cleveland, June 18, this decision being made by the National Automobile Chamber of Commerce at its annual meeting June 3 in New York city.

GEORGIA TRUCK OWNERS FORM ASSOCIATION.

The Georgia Motor Truck Owners' Protective association was formed last month at a meeting in Macon and the enthusiasm manifested and the plans launched indicate that the organization will be a boon to trucking interests in that section of the country. An attempt will be made to put the motor express service, which is highly successful in that state, on the same basis as the railroads through the establishment of a uniform schedule of rates and traffic regulations. The association will demand a reasonable motor truck license tax and will work for improved highways.

The officers are: President, W. E. Greene of the Macon Motor Express Co.; vice president, Gilham Morrow, Atlanta; treasurer, John W. Gallaway, Macon; secretary, B. Gilham, Macon; directors, M. E. Elliott, Macon; Leo P. Baum, Dublin; J. T. Dixon, Thomasville, C. W. Bailey, Rome; Ben Van Dalsom, Moultrie; R. H. McComb, Milledgeville; J. VanDyke, Brunswick; W. W. Martin, Fitzgerald, and T. F. Cathcart, Atlanta.

TRUCK MEN IN DRIVE AGAINST "MOVING DAY" IDEA.

Other cities might well follow the lead begun in New York city against the practice of having an annual moving day. Practically all leases expire in that city on Sept. 30 and 10 per cent. of all tenants move. The result is that moving vans, motor and horse driven, cannot handle the work in such a brief space of time. All kinds of fly-by-night truckmen are pressed into service. The work is illy done, articles are lost, destroyed or damaged and, in some cases, entire loads of furniture have disappeared.

The same inconvenience to truck operators is also experienced by painters, paperhangers, repairers, public utility men and a host of other service workers. Consequently the movement to change the practice is receiving wide impetus. The drive has started on the real estate men, who are urged to have three or more leasing dates instead of one.

GROCERS FAVOR TRUCKS.

The Southern Wholesale Grocers' association unanimously adopted resolutions at its recent annual convention favoring the use of motor trucks as a means of speeding up delivery and reducing costs. The resolutions particularly laud the advantages, economies and conveniences attendant upon the use of the trucks in handling less than carload merchandise package freight.

TRUCK DEALERS ELECT.

The Motor Truck Division of the Milwaukee Automobile Dealers, Inc., has elected the following officers: Chairman, M. D. Newald; Harry P. Robinson, W. H. Upham, R. W. Osborn and A. Perego.

Better Service for Owners Planned by Managers

Standardizing on better service for the 6,800,000 passenger cars and 750,000 trucks in use in the United States was given impetus as a result of the Service Managers' Convention of the National Automobile Chamber of Commerce held at Indianapolis, Ind., May 24-26. Matters relating to the motor truck field came in for particular attention. The first two days were devoted to discussion and the final day given over to trips to local plants.

E. T. Herbig, sales manager of the Service Motor Truck Co., and chairman of the Service committee, presented the report of that body on standard repair parts and service policies. A report of the Service department was made by Secretary H. R. Combleigh. There was a general discussion of the N. A. C. C. service department and its proposed activities.

The owner's viewpoint as to his responsibility and what he expects in the line of service was presented by E. W. Turley, manager of the Service Department of Wilson & Co., and what the service department expects from and owes to the owner was explained by Henry R. Selden, service manager of the Selden Truck Corp. The shortage of express service was another topic which was featured in the talkfest.

STANDARDIZING TRUCK SALES IN MONTREAL.

The Montreal Automobile Trade association is engaged in a movement to have all dealers in that city make credit sales on a common basis. Dealers are to file with the association a statement of prices asked for cars and trucks and what they are paying for used cars. A schedule on used vehicle prices will be issued. The organization has offices in the Windsor hotel. Its recently elected officers are: President, J. R. Marlow; vice president, C. S. Hoben; treasure, N. J. E. Catudal; secretary, George Bergerow; active secretary, A. Levesque; directors, A. E. Gadbois, Paul R. Hanson, S. E. Smith.

UNIFORM TRAFFIC RULES.

The Street Traffic Committee of the Chicago Association of Commerce has expended months of effort in studying traffic conditions throughout the United States and has formulated a uniform code of traffic laws which are to be submitted to legislative bodies in every state for adoption. The proposed regulations are not drastic and present no innovations. They simply provide for uniform rules throughout the country regarding speed limits, signaling, passing vehicles, lights and traffic signs.

New York State Farms Splendid Market for Trucks

New York state farms offer an attractive field for the sale of motor trucks, a recent survey by county agricultural agents shows. In 38 counties there are 6118 trucks on the farms and a demand for more. The present ratio of trucks to farms is one to 8.3 and 74 per cent. of the county agents report that there is a real need for more trucks.

Following is a summary of the survey:

Question—Is there a real need for more motor trucks among farmers in your county?

Answer—Of the 42 county agents reporting, 31 (or 74 per cent.) stated that there is a real need for more motor trucks; six (or 14 per cent.) that there is no need, and five (or 11 per cent.) that the need was limited.

Question—What size truck does the farmer want?

Answer—In 29 counties the need is for trucks from one to two tons capacity; in six counties the need is for trucks of less than one ton; in three counties the need is for trucks from 2½ to five tons. The smaller sizes are used for milk hauling in sections where dairying is a minor operation; the larger sizes in truck garden sections adjacent to large cities.

Question—How many trucks are owned by farmers in your county?

Answer—Total for 38 counties 6118. Four counties gave no figures but one reported "many."

Question—How many farms in your county?

Answer—In the 41 counties replying there are 50,713 farms.

CARS TO SOUTH BY WATER.

The shortage of freight cars for the transportation of automobiles has been relieved to some extent by shipments to the South by water from Cincinnati. The machines are shipped "set up" and at one-half the railroad freight rates. Cars shipped and awaiting shipment by this route are valued at \$2,400,000.

CINCINNATI BIG DISTRIBUTING CENTER FOR PERISHABLES.

Cincinnati ranked seventh as a consuming and distributing center for unloads of perishable fruits and vegetables in 1919 according to figures just made public by the Bureau of Markets of the Department of Agriculture. In the four years ending in 1919 that city received and unloaded 20,493 carloads of potatoes, peaches, strawberries and tomatoes. Home grown stock is not included in these figures. As the suburban center of southern Ohio, northern Kentucky and southeastern Indiana and the largest port on the Ohio river, Cincinnati is growing in importance from a marketing standpoint.

NORWAY LIMITS PROFITS ON AMERICAN TRUCKS.

The Norwegian Price Control Commission has issued a ruling limiting the profits of dealers in foreign cars to 15 per cent. on the first 10,000 crowns, 12½ per cent. on the next 5000 and 7½ per cent. on an amount over 15,000 crowns. The percentage is figured on the cost of the machine laid down in Norway, including freight, insurance and duty. It is expected that this ruling will result in a number of American truck manufacturers winding up their dealings with that country.

Farmer Discs Field with Truck When Tractor Fails

The utility of trucks in times of emergency was shown unmistakably by William Berkenstock, Fullerton, Cal., who recently used one in the work of cultivating his farm. The breaking down of his tractor caused Mr. Berkenstock to call on a three-ton FWD truck which he owns to do the work so urgently needed.

The truck was used to disc and subsoil a 10-acre orchard in which he was preparing to plant young citrus trees. Faced with the necessity of discing the field before the trees arrived, and with the tractor out of commission, he hooked the disc on the truck and did the required job quickly and easily.

A Million Prospects for Truck Sales on U. S. Farms

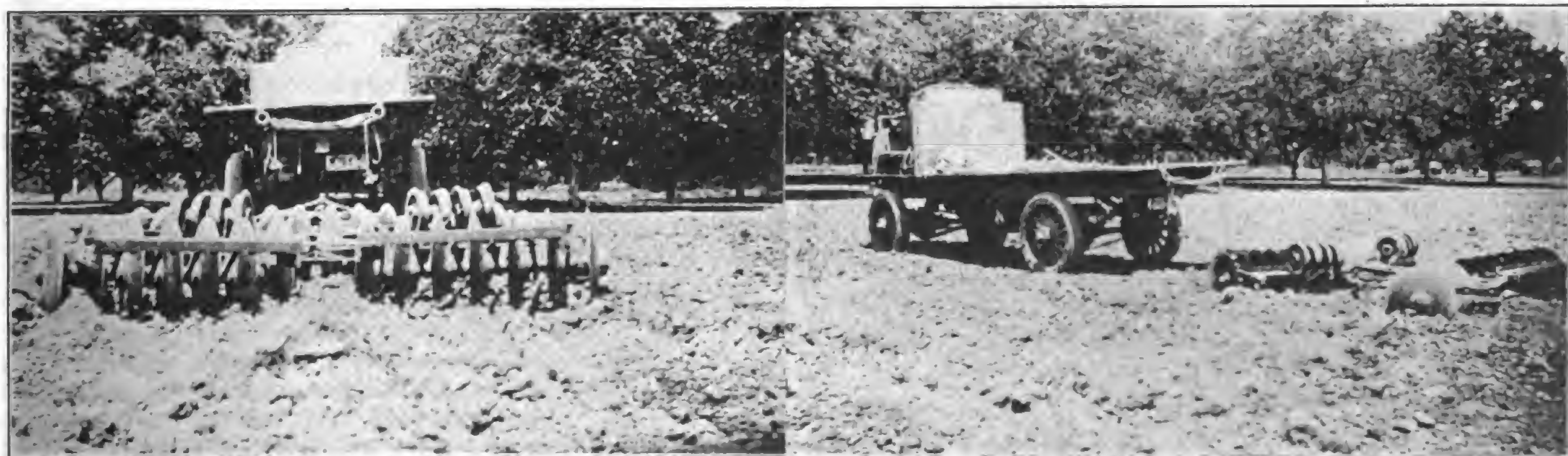
The Goodyear Tire & Rubber Co. maintains there is a million farmer truck prospects as the result of 25,000 questionnaires sent farmers, grangers and other farm organizations. The replies from all sections of the country show the attitude of 42,000 individual farmers. D. M. Petit of the Goodyear company brought out these facts in addresses to truck manufacturing concerns this month.

Of the 5000 replies already received, many being from granges, and all representing 42,000 farmers, 44 per cent. are considering buying trucks. There are 6,700,000 farms and it is estimated that the replies received are typical of the upper 2,000,000 of these farms and would give about 1,000,000 immediate prospects for trucks. Of those in the market for these vehicles 42 per cent. have farms of from 100 to 200 acres and 52 per cent. over 240 acres. Seventy-six per cent. are horse users and 24 per cent. truck users.

It was shown that the demand is for one-ton, 1½ and two-ton trucks, the latter being for the larger farms. Half of the farmers call for pneumatic tired trucks, 45 per cent. for solids and five per cent. for pneumatic tires in front. Grain and live stock are the chief products hauled by the truck users, of whom 69 per cent. are able to get better prices because of their trucks and 53 per cent. of whom also do outside hauling. Of those who do not own them 33 per cent. gave financial reasons and 11 per cent. blamed their backwardness to inferior roads. Last year there was \$80,000,000,000 invested in farming and production totaled \$25,000,000,000.

COLUMBUS, O., USES TRUCKS.

Through the Columbus, O., ship-by-truck bureau 1733 tons of merchandise, not counting furniture, were shipped by truck from April 12 to May 14. The bureau estimates that fully as much more was transported by trucks owned by individual firms operating their own vehicles. Foodstuffs were a big share of the products shipped and many agricultural implements were included.



Truck Hauls Gang of Discs When Tractor Fails at Farm of William Berkenstock at Fullerton, Cal. The View at Left Shows the Thorough Breaking of the Soil; at Right, the Manner of Coupling and the Truck and Equipment in the Field.

ACTIVITIES OF THE INDUSTRY

New Financing for General Motors Products

The General Motors Acceptance Corporation, which finances the sale of General Motors automobiles and other products for deferred payments, has doubled its capital and supplies from \$2,500,000 to \$5,000,000. The capital stock is now \$4,000,000 and the surplus \$1,000,000.

This step will place additional financing facilities at the disposal of dealers and will also enable bankers to secure additional collateral gold notes that are founded upon the obligations of the automobile dealers and buyers. The corporation is now doing business at the rate of \$150,000,000 a year.

When the officers and directors of the General Motors Acceptance Corporation were elected on May 13 a number of officials who have shown especial fitness to assume higher responsibilities were promoted. The list includes three new vice presidents. These are Curtis C. Cooper, secretary, who is succeeded in the latter post by his assistant, George H. Bartholomew; John J. Schumann, Jr., who has been in charge of the sales of the corporation's collateral gold notes to bankers, and Albert L. Deane, manager of the New York branch.

The full list of officers follows: President, J. Amory Haskell; vice presidents, John J. Raskob, Alfred H. Swayne, Paul Fitzpatrick, Curtis C. Cooper, John J. Schumann, Jr., and Albert L. Deane; secretary, George H. Bartholomew; treasurer, Reune Martin; directors, William C. Durant, Pierre S. du Pont, Irene du Pont, Lamont du Pont, Henry F. du Pont, J. Amory Haskell, John J. Raskob, Paul Fitzpatrick, Alfred H. Swayne, Curtis C. Cooper.

NEW PRICES ON DORRIS TRUCKS.

Following is the latest schedule of prices on Dorris trucks: K-4 two-ton, \$3400; K-7 3½ ton, \$4400.

ONEIDA COMPANY INCREASES CAPITAL TO \$7,500,000.

The Oneida Motor Truck Co., Green Bay, Wis., has increased its capital stock to \$7,500,000, expanded its floor space to 200,000 square feet and has awarded contracts for several additional units to its plant. President Lafayette Markle and all officers and directors have been re-elected. Production has been doubled since last summer and the hundreds of unfilled orders are being rapidly cared for. The factory site comprises 48 acres on the main line and a division line of the C. & N. W. railroad, and close to the tracks of the C. M. & St. P., G. B. & W., and K. G. B. & W. railroads.

The Oneida company is the only manufacturer of both gasoline and electric motor trucks, offering a complete series of gasoline vehicles from 1¼ to five tons and a series of electric trucks from three-fourths to seven tons, the first of which, the two-ton model, has already entered production. Its dealers cover the United States and many parts of Europe and Asia.

In addition to President Markle the other officers are: Vice president, F. E. Burell; secretary, S. H. Cady; treasurer, Mitchell Joannes; sales manager, H. J. Butler; chief engineer, Henry Schaeffer; factory manager, F. H. Bogart. H. E. Johnston is assistant to the president and at present is handling the fiscal affairs of the corporation.

HANDLING HIGHWAY TRAILERS.

The Philadelphia branch of the Highway Trailer Co. has appointed the following dealers in the state: Lawer Co., Allentown; Service Motor Co., York, and the Harrisburg Welding & Brazing Co., Philadelphia.

On Garford chassis the Combination Ladder Co., Providence, R. I., is building five combination city service trucks for New York City. Each will be equipped with a 40-gallon nickel plated chemical tank.

Goodyear Declares Stock Dividend of 150 P. C.

The Goodyear Tire & Rubber Co. on May 28 declared a stock dividend of 150 per cent. on the common stock of record June 14, the dividend totaling \$31,133,250.

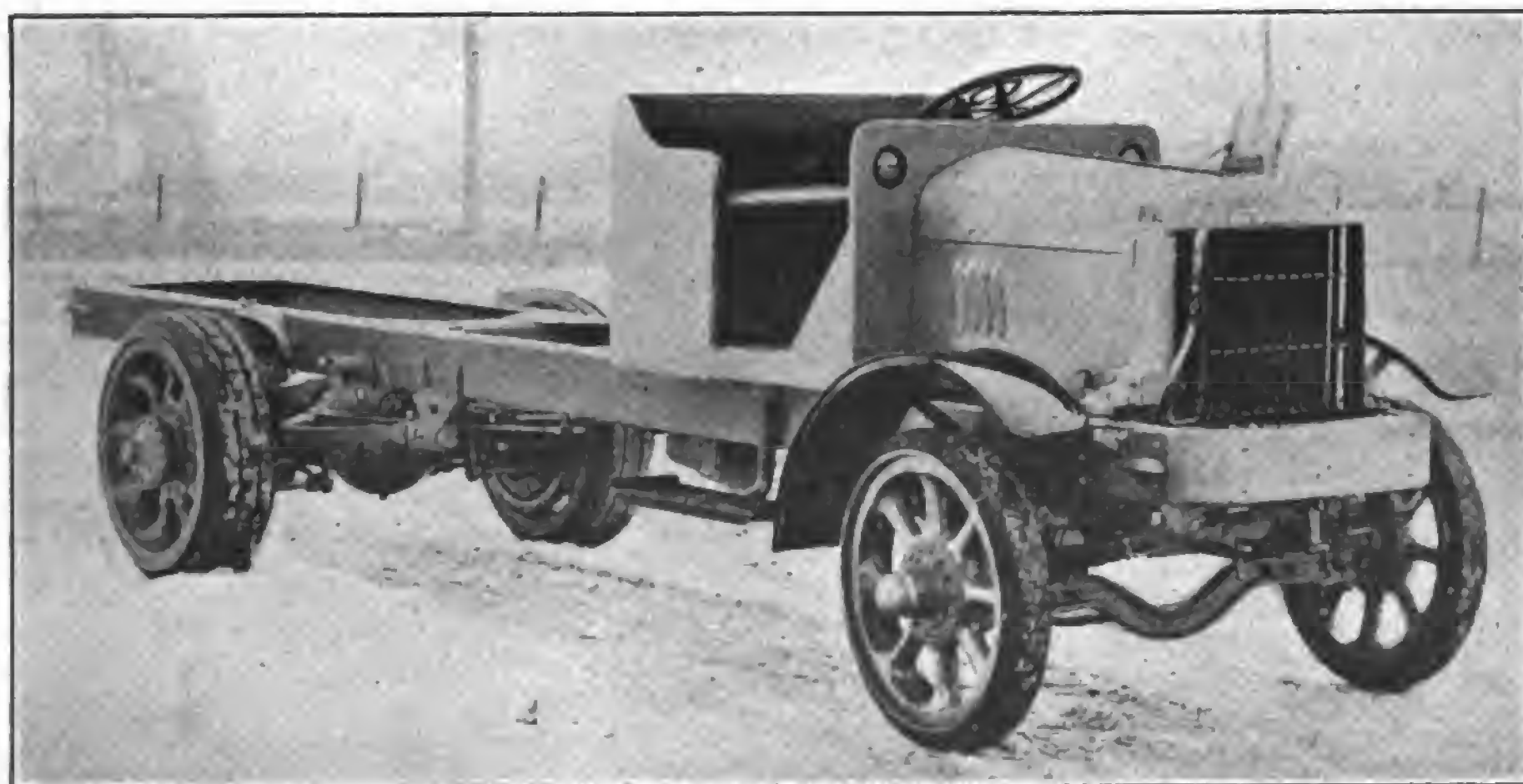
President F. A. Seiberling announced that business for the first six months of the present fiscal year exceeded that of the same period last year by 59 per cent. The company now has a surplus of \$43,000,000.

To get additional financing made necessary by the restriction of credits, the directors voted to sell \$10,000,000 in common and \$20,000,000 in preferred stock, which had been authorized but previously unissued. The outstanding capital will be thereby increased to \$128,557,250.

Since June, 1915, the authorized common stock of the Goodyear company has been increased to \$100,000,000 from \$8,000,000. In June, 1916, a 100 per cent. common stock dividend was declared, and \$8,427,000 was paid to stockholders at that time. The authorized first preferred stock has been increased over virtually the same period from \$7,000,000 to \$100,000,000, holders of preceding first preferred exchanging their old stock for the new at \$112 a share and \$2 cash. Of the preferred shares there were outstanding at the close of last year approximately \$40,000,000. The additional issue of \$20,000,000 preferred will increase the outstanding shares to \$60,000,000. Of the common stock there is outstanding approximately \$20,800,000, which, with the addition of the \$31,133,250 stock dividend, and the proposed \$10,000,000 additional common offered, will make the outstanding common stock total about \$62,000,000.

In addition to the cash dividends which have been declared and paid on the common stock there have been additional stock dividends declared as follows: In 1910, 100 per cent.; 1912, 100 per cent.; 1914, 20 per cent.; 1916, 100 per cent., and the declaration just announced of 150 per cent. When the \$100,000,000 preferred stock was authorized at the close of last year a previous second preferred issue for \$25,000,000 was retired at 105.

The Chassis Lubricating Co., New York, was organized recently and is co-operating with engineers in working up designs for particular chassis, incorporating the Myers magazine oiling system, the invention of Cornelius T. Myers. It provides a magazine oiling system for spring bolts and springs, consisting of hollow shackles and brackets. The system, which attracted attention when shown on several makes of trucks at the New York show, provides a two months' oil supply, which is fed by capillary attraction, only when the truck is in motion. It prevents moisture and dust from getting into the pin bushings.



The Complete Oneida 3½-Ton Gasoline Truck Chassis, This Being the Standard Design and Equipment of the Series. The Truck Is Worm Driven.

**INTERNATIONAL HARVESTER CO. TO
ISSUE NEW STOCK.**

The International Harvester Co. stockholders will meet July 22 to consider the matter of increasing the common stock, paying a 12½% stock dividend and providing a profit sharing plan for employees. At the meeting when the directors issued this call it was voted to increase the rate of the cash dividend on the common stock from six to seven per cent.

The increase of common stock proposed totals \$30,000,000, of which one-third would be used to pay a 12½ per cent. stock dividend on the \$80,000,000 of common stock, the balance to be available for the payment of two per cent. semi-annual stock dividends.

The proposed stock dividend is approximately the amount of cash dividends not paid during the four years of war on \$40,000,000 of common stock.

The profit-sharing proposal calls for the issuing of \$40,000,000 of preferred and \$20,000,000 of common stock for ownership by employees.

**SYRACUSE RUBBER COMPANY IS ON
HIGH SPEED.**

The Syracuse Rubber Co., Inc., Syracuse, N. Y., which entered the industry less than a year ago, now has a half million dollar plant, fully equipped and manned, and producing 200 cord tires and 500 tubes a day. The company was organized by George R. Loggie, its general manager and treasurer, who was connected with the sales and manufacturing departments of the Diamond, Miller and Goodrich companies for 20 years. He has built up a wonderful organization, which includes only men skilled in cord tire work. Syra-Cords are being tested on the company's experimental cars and are showing remarkable mileage records.

**SERVICE TRUCK COMPANY GIVES
DEALERS "SERVICE."**

The Service Motor Truck Co. has just held its sixth annual sales convention at Wabash, Ind., at which merchandising transportation rather than selling trucks was the keynote. The 300 dealers present included a number of foreign distributors. Among the features was the printing of a daily newspaper each morning, reviewing the proceedings of the previous day. Photographs taken in the morning were rushed to the nearest engraving plant at Ft. Wayne, 40 miles away, by airplane, and the cuts brought back in time for use in the paper of the following morning.

The Eisemann Magneto Corporation is now producing 15,000 magnetos a month and will increase this number to 18,000 before the end of the summer. Orders on hand amount to \$3,792,000 against \$1,578,000 a year ago. The gross earnings for the first quarter were \$1,093,123 and the net earnings \$167,873, this being in excess of six times the preferred dividend requirements and about \$19 on the common stock.

**Packard Will Build
Big Addition to
Truck Plant**

The Packard Motor Car Co., Detroit, will expend \$16,000,000 this year in factory additions and expansions made necessary by increased calls for its products. Its buildings already cover an area a mile long and 1000 feet wide. There will be a 75 per cent. increase in floor space devoted to truck production at a cost of \$2,000,000, giving a total of 400,000 square feet for truck machining and assembly operations.

**STEVENSON GEAR CO. CHANGES
NAME.**

The Stevenson Gear & Manufacturing Co., Indianapolis, Ind., has changed its name to Stevenson Gear Co. and has increased its capitalization to \$10,000,000. Plans are now being made to build a modern factory as an addition to its present extensive plant.

This company has recently perfected a multiple gear cutting machine which, it is claimed will revolutionize this branch of the automotive industry.

The officers are as follows: President, T. J. Stevenson; first vice president, G. R. Stevenson; second vice president, S. McQuiston; secretary, G. E. Stevenson; treasurer, E. D. Johns.

STORAGE RATE FOR TRUCKS.

The Industrial Warehouse Co., a \$25,000 East St. Louis corporation, has fixed a storage rate for trucks of seven cents per month per square foot of floor space occupied, using overall measurements. This is lower than the St. Louis rate.

The All-American Truck Co., Chicago, has advanced the price of its one-ton model from \$1295 to \$1795. The prices of its new 1½ and 2¼-ton models are \$2195 and \$2395 respectively.

**PRESSED STEEL CAR CO. TO BUILD
HOUSTON WHEELS.**

Realizing the vast field for the more economical operation of motor trucks, the Pressed Steel Car Co. of America has entered the equipment manufacturing business. As a result the Pressed Steel Pneumatic Wheel Co. has been incorporated to manufacture and distribute the Houston wheel, a successful pneumatic wheel for trucks. Production is already under way.

The stockholders and officers of the original Houston Pneumatic Wheel Co. are members of the new organization. The name "Houston Wheel" will be retained as the trade name for the product.

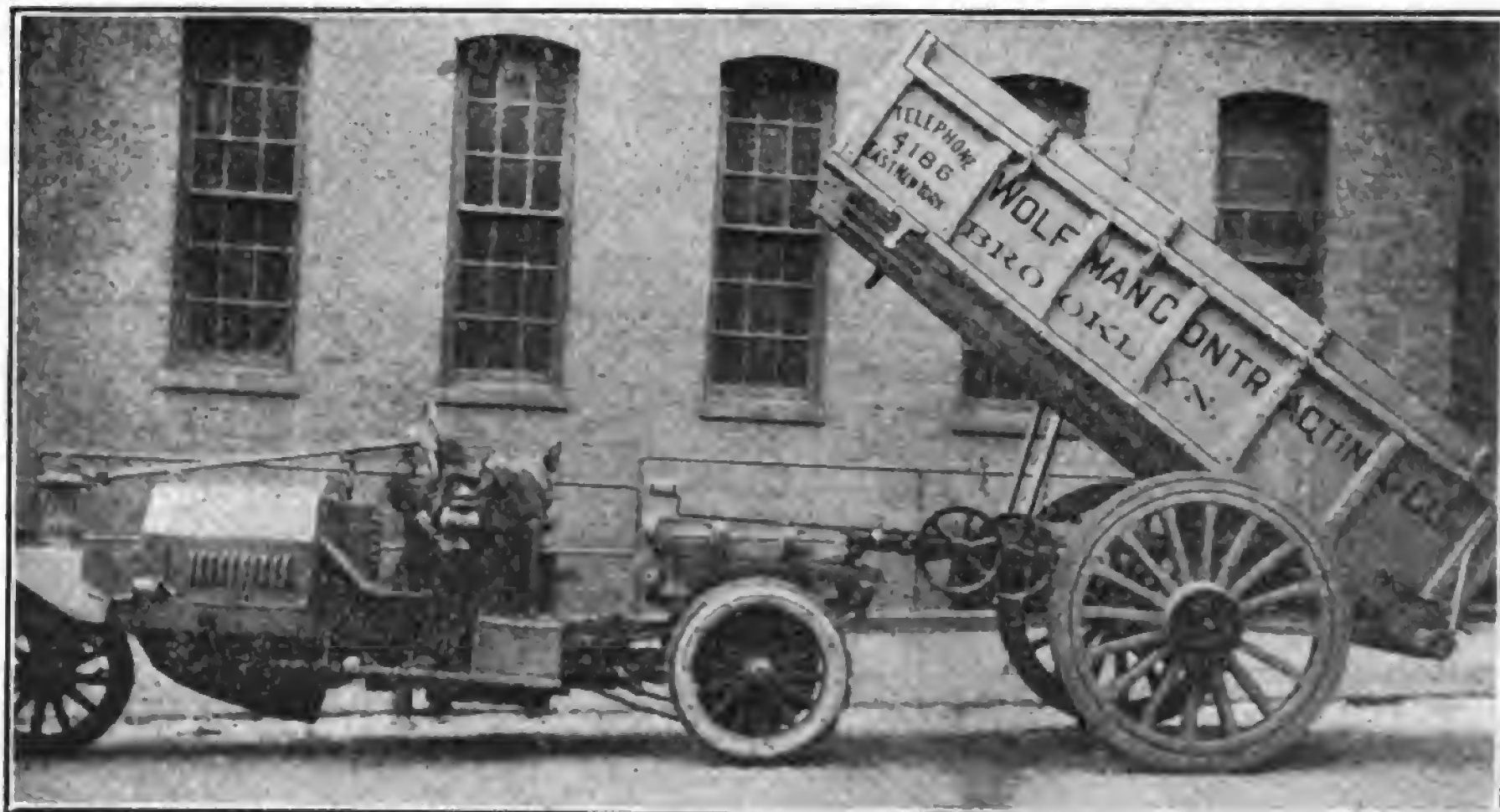
The officers of the company are: President, H. S. Autrey, Cleveland, O.; treasurer and first vice president, M. E. Andrews, Houston, Tex.; second vice president, N. S. Reeder, New York city; secretary, C. E. Church, New York city.

**GOODYEAR COTTON GROWING TO
BE SUPERVISED BY AIR.**

The Goodyear Tire & Rubber Co. will supervise cotton growing from the air on its 28,000-acre plantation at Goodyear and Litchfield, Arizona, near Phoenix. The company recently purchased thousands of acres of desert land which will be irrigated to grow long staple cotton used in fabric for the manufacture of automobile tires.

A small dirigible will be used and it will also be employed to carry Goodyear officials to Phoenix and even as far as the company's California factory at Los Angeles, 400 miles away. It is believed that the use of the airship for supervision on the cotton plantation will pave the way for its similar use in wheat field survey and similar purposes.

The Oshkosh Motor Truck Manufacturing Co., Oshkosh, Wis., is having bodies built under its supervision for truck buyers at a body plant in that city. Standard or special bodies are built and the purchaser gets exactly what he needs to meet his requirements.



An Example of Special Body Designing: An End-Discharging Semi-Trailer Body with Manually Operated Hoist, Built by the Shadboldt Mfg. Co., Brooklyn, N. Y.

JORGENSEN CAPITAL \$350,000.

The Jorgensen Manufacturing Co., Waupaca, Wis., has increased its capital stock from \$70,000 to \$350,000 and will immediately erect a foundry for making brass and aluminum castings, this to be the first unit of a large new plant to be built as early as practicable. In addition to the primer, motor tappets and other machined motor parts which the company is now making, it is intended to produce a three-day valve for use on tractors, a new carburetor, a new principle lifting jack and a line of sediment traps, priming cups and other motor fittings. The company will control its own sales except those of the Jorgensen primer, which the United Motors Service will handle.

Newly elected officers of the company are: President, P. J. Jorgensen; vice president, L. P. Lord; secretary-treasurer, C. H. Jorgensen, and assistant secretary-treasurer, J. C. Jorgensen; directors, J. M. Braun, William Timm and the officers.

WICHITA TRUCKS TO INDIA.

A solid train load of Wichita trucks, consisting of 15 flat cars, recently left the factory at Wichita Falls, Tex., for New Orleans, at which port the machines were loaded on a ship bound for Bombay, via the Suez Canal. These trucks will do the work in India hitherto performed by water buffalo, cattle and donkeys. Wichita trucks are a common sight in India, the first being sent in 1917 and others being added since in lots of six, 10, 15 and even 30.

20 PER CENT. OF TRUCKS SENT OUT IN DRIVE AWAYS.

Figures received by the Interstate Commerce Commission indicate that more than 20 per cent. of the trucks manufactured today are shipped as drive-aways.

EISEMANN CONTRACTS AND NEW SERVICE STATIONS.

Contracts for Eisemann Magnetos as standard equipment have been recently placed by the following companies:

Lewis-Hall Motors Corporation, Detroit, Mich., for various types of magnetos, also the magneto-generator.

Day-Elder Motors Corporation, Newark, N. J., for G-4 and GS-4 magnetos and the magneto-generator.

American Truck & Trailer Co., Kankakee, Ill., for G-4 magneto and M4G6 magneto-generator.

Standard Motor Truck Co., Detroit, Mich., for various types of magnetos, together with the magneto-generator.

Nelson Motor Truck Co., Saginaw, Mich., for G-4 and GS-4 magnetos, also the magneto-generator.

EISEMANN SERVICE HOUSES.

The Eisemann Magneto Corporation, Brooklyn, N. Y., has recently appointed the following new service stations:

Automotive Electric Service Co., Louisville, Ky.

Moody Electric Co., 213 E. Capitol avenue, Springfield, Ill.

Magneto-Generator-Starter Electric Co. Inc., 2527 Communipaw avenue, Jersey City, N. J.

G. W. Schroyer & Co., Main and Second streets, Dayton, O.

General Auto Electric Co., 258 Halsey street, Newark, N. J.

Electric Service & Tire Co., Bismarck, N. D.

Electric Parts & Service Co., 112 Ann street, Hartford, Conn.

F. A. Wildermuth, 1061 Atlantic Avenue, Brooklyn, N. Y.

Auto Electric Service Co., 412 W. Main street, Durham, N. C.

The Timken-Detroit Axle Co. has declared a regular dividend of four per cent. for March and April and an extra dividend of two per cent. Action on the contemplated stock dividends was deferred.

OFFER GOODYEAR COMMON STOCK TO EMPLOYEES.

The Goodyear Tire & Rubber Co., Akron, O., recently offered common stock to its employees and on the first day \$100,000 was subscribed. Already 21,957 of the 47,983 employees own \$11,358,400 worth of the preferred stock. The present stock sale was given impetus by the statement that the first six months' business totaled \$104,251,443, an increase of 59 per cent. over the same period in 1919. This concern will doubtless soon have a larger percentage of employee stockholders than any company in the United States.

REAL FACTS ON WESTINGHOUSE STORAGE BATTERIES.

The Westinghouse Electric & Manufacturing Co. is not entering the storage battery field, this information being furnished to dispel an impression gained by many through recent advertisements of the Westinghouse Union Battery Co., Swissvale, Pa. The latter concern is owned and controlled by the Westinghouse Air Brake Co., Wilmerding, Pa., and the Westinghouse Electric & Manufacturing Co. is not in any way connected with the manufacture, sale, distribution or service of its product.

WICHITA COMPANY REFUSES ORDER FOR 10 TRUCKS.

The Wichita Motors Co., Wichita Falls, Tex., recently turned down an order for 10 trucks from an oil corporation in New York City on the ground that the company had no service in that district and refuses to sell a truck it cannot stand back of at all times. The company's policy is to cover a part of the United States thoroughly rather than the entire country inefficiently.

MORE HOLLEY CARBURETORS FOR TRUCKS AND TRACTORS.

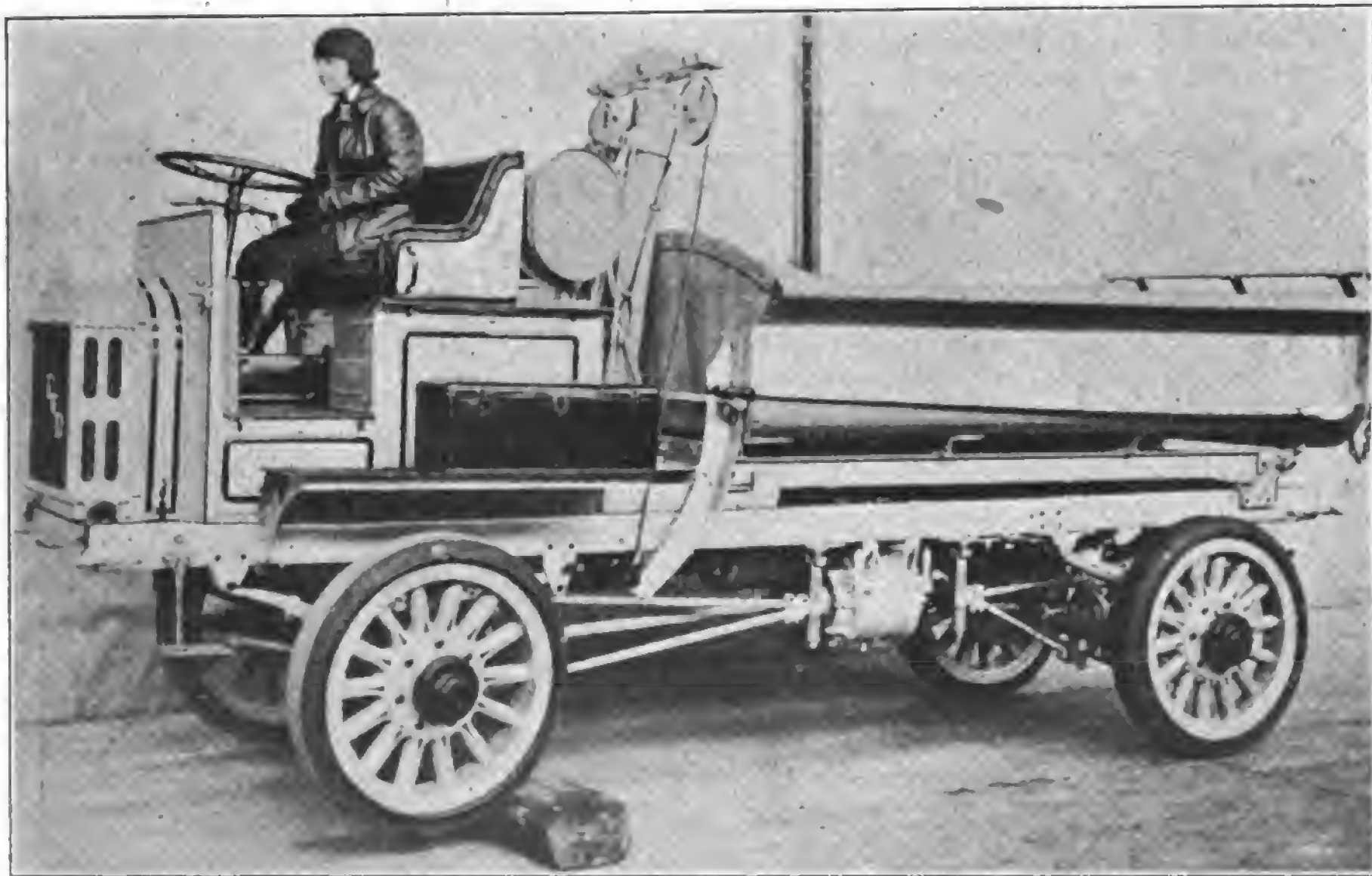
The Holley Carburetor Co., Detroit, Mich., has practically completed its new plant and most of the machinery has been installed. The new factory will enable the company to greatly increase its output of the All-Fuel type for tractors and trucks and the well known Ford carburetors.

MORE LANGSTADT CAPITAL.

The Langstadt-Meyer Co. of Appleton, Wis., has jumped its capital stock to \$400,000 from \$50,000. This large electrical contracting firm has in the past two years developed a successful farm lighting plant and self-contained generating plants for the army.

TO BUILD TRAILERS ONLY.

The Lapeer Tractor-Truck Co., Lapeer, Mich., has changed its name to the Lapeer Trailer Co. and will confine itself in the future exclusively to the manufacture of trailers.



Demonstration of Service Brake Power: Forward Wheels of This Three-Ton F-W-D Dumping Truck Are Held on the Log and Off the Ground, by the Pressure of the Girl Driver's Foot.

Business Held Back Until Railroads Can Catch Up

That the business of the country is being retarded and "pared down" through embargoes and priorities to fit the capacity of the country's railroads was the statement made before the Washington, D. C., City Club this month by George H. Cushing, managing director of the American Wholesale Coal association, who is shippers' representative on the Washington terminal committee appointed by the Interstate Commerce Commission.

This statement, which is a worth-while commentary on present conditions, was given front-page space by many farsighted Metropolitan newspapers. It appears to be the tendency in many quarters, from the government down, to forget that trucks are available to assist the railroads' care for the nation's transportation demands. All big movements are made contingent on the capacity of the railroads and where the railroads cannot meet the needs of business, business stops.

Mr. Cushing, who wished it understood that his remarks should not be construed as a criticism of the agencies now working to overcome freight congestion, and who apparently did not have the utility of trucks in mind, said in part:

"Rather than allow the carriers to grow to a size commensurate with the business of the country, it is proposed to whittle business down to a point where the carriers can handle it. This means that having suspended the growth of the railroads, it is proposed that we set out deliberately to stunt the growth of business. To my way of thinking no sane nation ever adopted a more insane policy."

TRUCKS PREVENT BURSTING OF LEVEE.

A motor truck can fill the breach in most any kind of an emergency nowadays. When floods threatened to destroy the levee protecting the Spring Lake farming district in Illinois recently, trucks were used to save the day and with great success. To prevent the embankment from crumbling 25,000 cement sacks full of sand and earth were needed. A fleet of trucks chased all over central Illinois and soon returned with full loads.

TO PARK TRUCKS OVERTIME IN BOSTON WOOL DISTRICT.

The wool firms of Boston which depend on trucks to distribute their stocks have asked the Street Commission of that city to permit them to park their machines more than 20 minutes in the wool district, since power vehicles have become indispensable in their business and some of the warehouses are a half mile from their offices. The granting of this privilege would greatly facilitate the work of the wool men.

MOTOR BUS CAN SOLVE STREET CONGESTION PROBLEM.

The Clydesdale Motor Truck Co., Clyde, O., spurred on by the success of the London Omnibus Co., which operates a large number of American-made Clydesdale trucks as buses, offers the motor truck bus as the solution of the congestion problem facing every growing community in America. Motor truck buses have been commonplace in London, Paris and other European centers for the last decade and yet this country, the home of the motor truck, has not taken advantage of the opportunity to improve our city transportation service at a reduced cost.

Concessions are being constantly made to preserve the antiquated street car service, which can never hope to cope with modern conditions. Motor buses need only garages and a comparatively few men for their operation. They decrease travel time and relieve congestion.

MIRROR LAW IN BAY STATE.

Because of the increased number of trucks coming into New England it is well to remind drivers from outside of the mirror law in Massachusetts, for violation of which arrests have already been made. State authorities have instructed cities and towns to enforce this law.

Connecticut to Try Steel Track for Truck Traffic

Steel channel tracks will be placed on one of the leading Connecticut highways to permit the enormous increase in weight of loads carried by motor trucks. If this experiment is a success it will be further extended in the state and other states will probably try the same plan.

Trucking Concerns to Form National Organization

A national association of motor trucking firms from all parts of the United States will be formed at a conference to be held at the Hotel La Salle, Chicago, June 26-27. The organization aims to deal with the problems which have arisen due to the extension of long-distance trucking as a result of rail congestion.

Representatives of the trucking industry from New York, Iowa, Michigan, California, Pennsylvania, Ohio, Indiana, Missouri, Massachusetts, Nevada, Texas, Colorado, Oregon, Illinois, Louisiana and Nebraska have accepted an invitation to attend.

Among the questions which will be discussed are the construction of highways powerful enough to withstand the heavy loads, study of automotive constructive elements, research in operating costs and equalization of loads, problems connected with the necessity for cooperation between commercial haulers in different cities in order to keep trucks supplied with return loads from long distances and many other matters vital to the industry.

HORSESHOEING PRICE UP.

Owners of horses, who are paying exorbitant prices for fodder, are now getting another jolt through an increase of 25 per cent. in the cost of horseshoeing. Boston, Mass., is among the cities which recently made this advance.

BAN BROOKLYN BUSES.

The Court of Appeals has sustained a decision by the lower court in Brooklyn, N. Y., granting a temporary injunction restraining the city from operating buses in competition with the lines of the Brooklyn City Railroad Co.



Overhead Highway Obstructions a Menace to Truck Transportation: An Illustration of the Small Clearance with High Loads.

FROM EVERYBODY'S VIEWPOINT

FLEET OF 15 ACE TRUCKS HAUL PARTS 4920 MILES.

The American Motor Truck Co., Newark, O., manufacturer of Ace trucks, unable to secure material by rail, assembled a fleet of 15 Ace trucks, which was driven to the following cities: Racine, Wis.; Harvey and Rockford, Ill.; Sandusky, Cleveland and Toledo, O., and Philadelphia, Pa. A total of 4920 miles was covered on the first trip, which required five days of eastern and eight days of western travel. No trouble of any kind was experienced.

Truck loads of Buda motors, Modine spirex radiators, Cotta transmissions, Parish and Bingham frames, Spicer universal joints, Mather springs, Dayton steel wheels, Cotta clutches and control sets and Ross steering gears were hauled overland to the Ace factory for assembling.

"GET-ACQUAINTED" TOURS.

Four "Get-Acquainted" tours are to be run out of Fort Wayne, Ind., this summer under the auspices of the Wholesalers' and Jobbers' Bureau of the Chamber of Commerce. Booklets showing the value of truck hauling in getting goods to customers in nearby cities in the shortest possible time will be distributed along the routes. Representatives of local jobbers, wholesalers, manufacturers and banks will make the trips.

NEW YORK LIMIT LAW ON.

The new law in New York state limiting the load of motor trucks, recently signed by Gov. Smith, went into effect June 1. The law provides that no truck shall carry a load greater than 25,000 pounds, the load to be distributed so that there shall be not more than 800 pounds pressure per inch in width of tire on any one wheel.

CITY BUYS THREE WHITE TRUCKS.

The city of Wilmington, Del., is the latest municipality to realize that money can be saved by motorizing its departments. Local teamsters and truck owners have put prices at such a figure that the authorities felt that immediate action was necessary. A start has been made by the purchase of three five-ton trucks from the White Company. These will be used in carting ashes, waste, etc.

STRIKE CLOSES TRUCK PLANTS.

Manufacturers of motor trucks and truck parts have been hard hit by the strike at Cincinnati, in which half of the 12,000 machinists and 700 automobile mechanics participated. A number of truck plants are closed down entirely. The machinists demands 25 per cent. higher wages, which the manufacturers consider unjust.

Bay State Truckmen Fighting Vicious Legislation

The Motor Truck club of Massachusetts held its final meeting of the season at the Boston City club June 15, when plans were launched to oppose threatened legislation increasing fees and limiting loads on motor vehicles. It was voted that the regular meetings of the club be held the first Friday of each month beginning in October, the first meeting of the fall to be held the second Friday in September. The treasurer reported the club to be in good shape financially.

President James J. Scully and James T. Sullivan talked on proposed legislation inimical to trucking interests and urged the members to join forces in opposition to these measures. The latter urged that all the facts tending to show the industrial value of commercial vehicles be gathered as part of the campaign.

Day Baker discussed the recent ship-by-truck tour, commending the venture for the message spread as to the worth of trucks in short hauls. Secretary Dwight S. Sleeper reviewed the work of the club during its short life and urged that more members be secured.

It was voted to send a committee to the state house hearing the week of June 20 on the subject of accidents, at which means will be suggested for preventing truck drivers from coasting down hills and children from climbing on vehicles.

BREWERY IS ASSEMBLING PLANT.

The Albany Brewing Co. plant, Albany, N. Y., will be used as an assembling plant for Ford cars and trucks, having been leased by the E. H. Trice Motor Co., Ford agents in Albany.

TRANSPORTATION MEN SOUGHT BY CIVIL SERVICE.

Civil service examinations will be held in the custom houses at New York, Boston and New Orleans, and in the post-offices at Philadelphia, Atlanta, Cincinnati, Chicago, St. Paul, Seattle, San Francisco and St. Louis, June 22, for superintendent of motor transportation at the Wingate general ordnance depot, Fort Wingate, New Mexico, and for vacancies in the general ordnance depots throughout the countries. Salaries range from \$2100 to \$2400.

GMC TRUCK DOES 600 MILES IN 48 HOURS.

A GMC truck recently did some traveling which comes mighty close to being a record, making a round trip of about 600 miles in 48 hours. If the drivers did any sleeping or eating they must have done it in the cab. The company needed a new boiler for its Pontiac, Mich., plant. The boiler was at Erie, Pa., but could not be shipped. A GMC two-ton truck was sent and delivered it just 48 hours later.

68,000 MAY DRIVE-AWAYS.

There were 68,000 drive-aways of motor trucks and cars in May, beating the April record by 7000 cars, according to figures presented at the annual meeting of the National Automobile Chamber of Commerce in New York city June 3. Owing to the transportation limits on incoming material manufacturers were reported to be now on a 75 per cent. basis.

It was shown that the March shipment of 3185 trucks abroad, valued at \$4,600,000, was a record. In order to reciprocate with foreign manufacturers it was unanimously voted by the 123 companies affiliated with the organization that Congress be asked to reduce the tariff one-third on cars from outside.

TRUCK HAULS FREIGHT CARS.

W. W. Ellison, manager of the Armstrong Transfer & Storage Co., Amarillo, Tex., has yet to encounter any obstacle to the utility of trucks. One of his two-ton trucks, Goodyear shod, recently piloted a string of wagons loaded with fodder through huge snow drifts and saved 1300 steers from starvation. During a shortage of freight engines the same truck was employed to haul loaded freight cars to the company's warehouse.

NEW SERVICE FEATURES.

The Service Motor Truck Co., Wabash, Ind., is presenting two new engineering features in the trucks now being produced. One is a method of maintaining the alignment of the rear wheels while using Hotchkiss drive and the other is a new oiling system for the spring shackles.

OHIO TRUCK SERVICE SUBS FOR 24,000 FREIGHT CARS.

The B. F. Goodrich Co. has compiled figures showing that 250 trucks are carrying \$1,500,000 worth of freight daily between Akron and Cleveland, equivalent to \$500,000,000 yearly, which would require the use of 24,000 freight cars. Good roads help make this possible. Nearly two whole days have been cut from the time necessary to get goods from city to city. Through the use of trucks all of Cleveland's big manufacturing plants have been able to run full time, despite the railroad situation.

TAYLOR TRUCK COMPANY SOLD.

The Freemont Motor Corporation, recently organized, has bought the plant of the Taylor Motor Truck Co. at Freemont, O., and is planning the manufacture of a six-cylinder passenger car.

OF TRADE AND INDUSTRY PERSONNEL

GARLAND JOINS WISCONSIN PARTS CO.

Ralph C. Garland, for years active in the automotive industry, has joined the Wisconsin Parts Co., Racine, Wis., as chief engineer. He will have charge of a large experimental laboratory. He was from 1906 for four years with the engineering department of the American Locomotive Co., at the Alco car and truck plant at Providence, R. I., and was later connected with the Thomas Taxicab Co., Buffalo, N. Y.; Pope Manufacturing Co., Hartford, Conn.; U. S. Motors Corpora-



Ralph C. Garland, Chief Engineer, Wisconsin Parts Co.

tion, Crane Motor Car Co., Edwards-Knight Motor Car Co., New York City; the Martin Tractor Co., Springfield, Mass., and with the Briscoe Motor Co., Jackson, Mich., and the Willys-Overland, Toledo, O., as designing engineer.

For four years Mr. Garland has been associated with the engineering department of the General Motors Corporation, specializing the application of ball bearings, but during that period he was included in the group of experts that designed and developed the class B truck for the United States Motor Transport Corps service.

BARBER HANDLING WINTHERS.

C. M. Barber, Albuquerque, N. M., has signed a contract to distribute Winther trucks in New Mexico, Western Texas, Eastern Arizona and Chihuahua.

BECKWITH RESIGNS.

H. L. Beckwith, for the past five years manager of service for the General Motors Truck Co., Pontiac, Mich., has announced his resignation.

W. T. Walker has resigned as president and general manager of the Powrlok Co., Cleveland, O., but has not announced his plans for the future.

Col. Charles Clifton Again Heads the N. A. C. C.

Practically all the prominent car and truck manufacturers were represented at the annual meeting of the National Automobile Chamber of Commerce in New York, Thursday, June 3, when Col. Charles Clifton of Pierce-Arrow Motor Car Co. was re-elected president and other officers were named as follows: Vice president, Roy D. Chapin, Hudson Motor Car Co.; second vice president, C. C.



Col. Charles Clifton, Again Elected President of the N. A. C. C.

Hanch, Maxwell Motor Co., passenger car division; second vice president, Windsor T. White, White Co., motor truck division; secretary, A. J. Brosseau, International Motor Co.; treasurer, H. H. Rice, General Motors Truck Co., and general manager, Alfred Reeves.

Directors elected were as follows: Charles Clifton (Pierce), Windsor T. White (White), Horace E. Dodge (Dodge), Harry M. Jewett (Paige), W. C. Sills (Chevrolet).

VISITS DENBY DEALERS.

General Sales Manager L. B. Graham of the Denby Motor Truck Co., Detroit, is on the Pacific coast conferring with district managers who report a phenomenal future for the motor truck business. He announces a tremendous demand for the Denby truck in New York, Philadelphia, Nashville, St. Louis, Dallas and other points he has visited.

DETROIT DUPLEX DEALER.

The Duplex truck will hereafter be distributed in Detroit by Frank M. Foster, head of the Frank M. Foster Co.

Orton C. Beacraft, who was general superintendent for the Bethlehem Motors Corp., is now production manager for Keystone Motor Truck Co., Oaks, Pa.

SAMELS NOW F.W.D. ASSISTANT SALES MANAGER.

E. A. Samels has been made assistant sales manager for the Four Wheel Drive Auto Co., Clintonville, Wis., after service of about a year in its sales department. Mr. Samels was for a considerable period connected with the Chicago branch of the Locomobile Co. of America, which directed the operations of a number of branches and had territorial supervision of sales in 24 states. Later he was special Chicago representative for A. J. Banta, president of the Maxwell Sales



E. A. Samels, Assistant Sales Manager, F.W.D. Auto Co.

Co. Mr. Samels is well known especially in the Middle West.

BAIRD TALKS WITH FARMERS ON TRUCK NEEDS.

James E. Baird, advertising manager of the General Motors Truck Co., Pontiac, Mich., is back at headquarters after a tour through eight mid-western states for the purpose of assembling information to be diffused later in an educational campaign among farmers generally. Mr. Baird visited dealers and users, particularly farmers. Valuable data was obtained as to just what the agriculturist needs.

NEW DENBY "AD" MAN.

L. B. Graham, general sales manager of the Denby Motor Truck Co., Detroit, has recognized the opportunity to observe the advertising needs of Denby distributors and dealers during the three years E. T. Sutton served as district sales manager and has appointed Mr. Sutton as advertising manager for the company.

H. J. Crean, who was assistant secretary-treasurer of Fisher-Wilkie, Ltd., Sandwich, Ont., is now assistant to President R. A. Palmer of the Collier Motor Truck Co., Bellevue, O.

HERSEY IS JENKINS VULCAN SPRING SALES MANAGER.

The Jenkins Vulcan Spring Co., Richmond, Ind., maker of replacement spring for trucks and cars, has appointed Dwight T. Hersey sales manager. Mr.



Dwight T. Hersey, Sales Manager, Jenkins Vulcan Spring Co., Richmond, Ind.

Hersey is widely known to the industry and trade, having been for a number of years assistant sales manager for the Splittorf Electrical Co., Newark, N. J.

HINKLEY GETS REED.

Sales Manager Charles A. Neville of the Hinkley Motors Corporation, announces the addition of N. S. Reed to the Hinkley staff. He will work closely with truck manufacturers in the adaptation of Hinkley heavy duty automotive engines to their output, giving his experience and specialized knowledge to the cause. He has been truck engineer of the Paige-Detroit Motor Car Co. and also had truck experience with Gramm, Garford and the government.

SWEDISH FIRM OPENS OFFICE.

Ivar Du Rietz of the firm of Sven Du Rietz & Co., Inc., of Stockholm and Norrköping, Sweden, has returned to Sweden after a visit of several months in this country, during which time he perfected arrangements for the opening of an office of his company at 1702 Consumers' building, Chicago, in charge of Walter E. Devlin.

BETHLEHEM SALES CHIEF.

The Bethlehem Motors Corporation, Allentown, Pa., has appointed C. R. Newby, a member of its sales staff, as sales manager. The new appointee has been a live wire with the organization and the promotion is a reward for merit. He was formerly with the Studebaker organization.

BOURNE HEADS SYNDICATE TO RUN BIDDLE COMPANY.

Stephen N. Bourne, widely known to the industry as head of the Bourne Motor Truck Co., which had developed a motor truck combining gasoline power and an electric drive previous to the war, heads a Syndicate which has assumed control of the Biddle Motor Car Co. A body shop and other additions to the Biddle plant at 142nd street and Fifth avenue, New York City, will be erected. H. C. Maibohm of the Maibohm Motors Co., and a number of financial men are associated with President Bourne. It is planned to put 100,000 shares of the company's stock of no par value on the market.

JOHN WESLEY HYATT DEAD.

John Wesley Hyatt, inventor of the Hyatt roller bearing, died suddenly May 10 at his home, Windermere Terrace, Short Hills, N. J., of heart disease, aged 83. He also invented celluloid. Other patents covered a wide range and showed the remarkable scope of his talent. He had been retired for a number of years.

PFEIFFER WITH PAGE.

Benjamin S. Pfeiffer, who assisted in designing one of the first self-lift plows for the Avery company, and who was also associated with the Holt Manufacturing Co., the International Harvester Co. and the New Departure Manufacturing Co., will join the Page company, consulting engineer, June 1.

FRANKLIN MEN ADVANCE.

The Franklin Automobile Co., Syracuse, N. Y., has appointed Chief Engineer Ralph Murphy to act as assistant to Vice President John Wilkinson. He is succeeded by Louis Stellman, assistant engineer. Messrs. Murphy and Stellman have been with the company since 1909.



R. Jackson Jones, Assistant General Manager, Traffic Motor Truck Corporation, St. Louis, Mo.

K. D. SMITH IS SYRACUSE RUBBER COMPANY SUPERINTENDENT.

K. D. Smith, who is young in years but old in experience, has been appointed factory superintendent of the Syracuse Rubber Co., Inc., of Syracuse, N. Y., following the wonderful success he has



K. D. Smith, Superintendent of the Syracuse Rubber Co., Syracuse, N. Y.

scored since November, 1919, when he joined the Syra-Cord forces. Under his supervision production has jumped from less than 100 to over 200 tires a day and general tire production from 200 to 700 a day. This capacity will be doubled by fall.

Mr. Smith has had 11 years experience in chemistry and manufacture of tires. From 1909 to 1915 he did experimental, analytical and research work with the Akron group of rubber corporations. The Miller Rubber Co. then secured him as compounding chemist, in which position he served until he joined the Syra-Cord interests. The Syracuse company has an ample supply of cord fabric and pigments and will not suffer from any shortage.

MAXWELL LOSES FLINT.

John Flint has concluded his services with the Maxwell Motor Co., Detroit, to devote all his time to his personal interests as a member of the firm of West & Flint, accountants and auditors, New York City.

McLAUGHLIN AN ACE.

The Ace Motor Corporation, Philadelphia, Pa., has engaged W. F. McLaughlin, formerly general superintendent of the Hyatt Bearings Division, General Motors Corporation, as works manager.

GILBERT HEADS VULCAN MOTOR AXLE CO.

F. C. Gilbert is president and treasurer of the Vulcan Motor Axle Co., a concern just organized at Detroit, with H. S. Weaver, Sidney G. Love and C. C. Miller vice presidents, J. C. Hanlon secretary



F. C. Gilbert, President and Treasurer, Vulcan Motor Axle Co., Detroit.

and H. G. Beechler chief engineer. The officers of the company have been especially active in the power vehicle axle industry and have been constantly associated for more than 10 years.

The company has capital of \$1,000,000, and it will produce axles for various types of power vehicles. A large plant has been secured in Detroit's Milwaukee Junction manufacturing district, which has ample trackage for receiving and shipping, and this is now being equipped with machinery, tools of all kinds and facilities for production which are regarded as being the best obtainable.

The preparation of the plant for production is progressing well and the initial output is expected early in the autumn. The company is perfecting its manufacturing and sales organizations, and further announcement of these will shortly be made.

NEW GMC SALES LEADER.

The Nebraska-Buick Auto Co., which handles GMC trucks in Nebraska, Iowa and South Dakota, has promoted R. E. Gerspacher, who was formerly assistant manager at the company's Omaha branch, to be general sales manager, with headquarters at the home office, Lincoln, Neb.

NEW DETROIT DISTRIBUTOR FOR COMMERCE TRUCK.

W. F. Horning Co., Detroit, will handle the Commerce truck in that territory, succeeding Frank M. Foster. The Horning Co. has engaged the services of J. S. Gross, who had charge of the Commerce business with Foster.

S. V. NORTON IS GENERAL MOTORS SERVICE MANAGER.

The General Motors Truck Co. has appointed S. V. Norton as service manager, effective July 1. He succeeds H. L. Beckwith, resigned. Mr. Norton is one of the best known men in the industry. He



S. V. Norton, Who Will Become Service Manager, General Motors Corp., July 1.

was for 15 years with the Goodrich Rubber Co. and was in charge of the solid tire department for the past 10 years. He knows transportation thoroughly, is a deep student of truck and tire problems, is a member of the S. A. E. highways councils and other bodies, and is author of "The Motor Truck as an Aid to Business Profit."

MAX D. BENDEL DEAD.

Max D. Bendel, manager of the Twitchell Gauge, Chicago, who was well and popularly known in the industry, died suddenly of heart failure on May 7 shortly after he had boarded a suburban train on his way to business. He had been the chief factor in the rapid expansion of the Twitchell business since he assumed control in 1912, shortly after the concern was acquired by A. Schrader's Son, Inc., of Brooklyn, N. Y. He also conducted the Chicago branch of the Schrader company.

NASH DEALERS IN UTICA.

G. R. Ashworth and D. F. Wilson have formed the Nash-Utica Motor Co. to represent the Nash Motors Co. at Utica, N. Y. Mr. Ashworth was formerly assistant sales manager of the Automotive Products Co. of Detroit.

FIRESTONE'S OLD BOSS WILL SELL STUDEBAKERS.

H. B. Edwards, for whom H. S. Firestone and Barney Everitt formerly clerked in a buggy store, has been appointed Detroit branch manager for the Studebaker Corporation.

TWO JOBS FOR KOETHER; EASON GETS NEW BERTH.

The General Motors Corporation has appointed B. G. Koether, vice president of the Hyatt Roller Bearing Co., as assistant general manager of its Hyatt division. Mr. Koether will continue as vice



B. G. Koether, Made Assistant General Manager, Hyatt Division, General Motors Corp.

president of the Hyatt Co., but will be forced to give up his duties as director of sales and advertising. He will have his headquarters at Harrison, N. J. The Hyatt Co. has brought back C. M. Eason, who was a big factor in developing its tractor business, and made him sales manager of that department. For several months he has been general manager of the Engineering Development Co., Moline, Ill.

STEWART PROMOTIONS.

The Stewart Motor Corporation, Buffalo, N. Y., has promoted General Sales Manager Charles C. Craig to be assistant to the president, in charge of the outside interests of the management. The new general sales manager is Edward K. Roberts, who has been with the Bush Manufacturing Co. and was formerly with the Locomobile Co. of America.

ELLIOT PACKARD "AD" MAN.

The Packard Motor Car Co. of New York city has appointed William Elliot as advertising and sales promotion manager, with William H. Walling and Bert C. Chambers as assistants.

ZWERGLE SALES DIRECTOR.

The recently organized Transport-Utilitor Sales Co., Toledo, O., has engaged George Zwergle, formerly factory representative of the Republic Motor Truck Co., as director of sales.

A truck display will be a feature of the annual show held at the fair grounds, Indianapolis, Ind., Sept. 6-11.

Paging Mr. Pep for Next National Truck Show

Industry Divorces Cars from Trucks at Exhibitions It Controls,—May Stage a Demonstration of Actual Work, Possibly in Open Air, But May Sanction Big Tour

THE next national motor truck show will not be a side show, but will be under the industry's own main tent.

Trucking interests the country over as one man in this demand. The Motor Truck Committee of the National Automobile Chamber of Commerce has taken a definite stand in this direction.

At a special meeting of the truck manufacturers this month the vote was against a truck show this winter, the general trend of sentiment calling for a demonstration in the spring which will strikingly exemplify truck utility and service.

The next show may be held in Madison Square Garden, New York, the first or second week in October, with another exhibit two weeks later in Chicago. These dates are regarded as too early by some of those interested, who advocate April, 1921.

Those who urged that no show be held before October, 1921, seem to be a small majority, in which class are also those who are clamoring for no show at all.

While there are discordant views as to many angles of the situation, not a single, small voice seems to be raised in favor of continuing the plan of having the national truck exhibits as "distinct" auxiliaries of the automobile shows.

The truck industry is a firmly established institution which can very well travel without a guide or keeper. Harsh and cruel treatment, neglect to provide, incompatibility or other grounds may be offered for the desire of the truck men to be divorced from the automobile shows, but in any event the separation is final.

Truck Interests United.

The Motor Truck Committee of the N. A. C. C. met in Detroit early last month and prepared its recommendations for the June meeting of the national body. There was no division on the policy of running a truck show on its own. A questionnaire sent members of the industry and views expressed by manufacturers proved that all are of one mind and give the committee confidence in its decision to make the gap even wider between the two industries than the seven miles which separated the auto and truck exhibits at New York or the four miles that divided them at Chicago.

The Truck in Action.

The coming exhibit will not only be run as a separate unit, but will be con-

ducted on entirely different lines than ever before. Not only will trucks be displayed, but they will be thoroughly demonstrated and the public shown just what can be done with them in widely diversified work. It is thought that the principles of design, construction and maintenance of trucks are well known today both to users and prospective users. But many have not seen trucks in what may be regarded as adverse conditions. The next show will be an action show in which the audience will get its money's worth.

General Sales Manager George H. Graham of the Pierce-Arrow Motor Car Co., a member of the Motor Truck Committee, has presented the best plan expounded to date and something along this line is certain to be adopted. Mr. Graham calls for a spectacular exhibition in Madison Square Garden, showing the motor truck at work on the stage, motion pictures supplementing the actual performances of real machines. He would have the seats in the amphitheater retained for spectators.

Movies and Stage Effects.

Manager Graham suggests one stage setting of trucks starting from the oil wells with their loads of fuel, the delivering of the product to city and rural communities and the other transportation changes being depicted by moving pictures and various stage effects. The transportation of live stock and food products from the farm, terminal shipping methods and other stunts of the truck could be similarly shown.

The feeling everywhere seems to be for demonstration of this nature rather than an inanimate exhibit of trucks. The N. A. C. C. Motor Truck Committee members are Chairman Windsor T. White, Victor L. Brown, Ray C. Chamberlain, M. L. Pulcher, George M. Graham, R. H. Salmon and Secretary F. W. Fenn.

Talk of Outdoor Show.

Among the possibilities are an outdoor show when tests can be made not only of the trucks but of various important accessories. This would apply especially to pneumatic tires. Devices for saving fuel could be tested. Engines, carburetors and all the essentials could be tossed in and out of the machines for the delectation and information of the public.

The trucks might be worked individually or in contests and in any event there

would be action to keep the spectator alert. The wonderful utility of motor vehicles could be thoroughly and definitely proven. And it is what a truck can do, not its color scheme or design, which appeals to the common sense and pocket-book of the average buyer.

Trucks Stood Alone in 1910.

The next national truck show, will not be the first single-handed enterprise in which the industry has engaged. In 1910, 1911, 1912 and 1913 truck shows were held, independent of passenger cars.

In those days the industry was in its swaddling clothes. The manufacturers were called on for special designs, they were forced to devote the time of many of their high salaried men for weeks before and during the progress of the show and were otherwise asked to bear a burden greater than the actual returns. They naturally soured on the proposition.

The combination show was continued in 1914 and through 1917 in Boston alone, although no truck shows were held in New York those years. The National Automobile Chamber of Commerce, which sponsored the New York and Chicago exhibits, decided against shows of any kind in 1918, for the country was engaged in war.

The 1919 Shows O. K.

With the ink on the armistice just at the drying point the enthusiastic dealers' associations in New York and Chicago swung into action and as a result of their efforts two big national combination shows were held in January, 1919, one at New York and the other at Chicago.

In the eastern city the passenger cars were displayed at Madison Square Garden and the trucks at the 69th Regiment armory, about a block away. In Chicago the pleasure vehicles were shown at the Coliseum and the trucks at the First Regiment armory, the two buildings being but a stone's throw from each other. Both shows were roaring triumphs.

The National Automobile Chamber of Commerce, the dominating influence in the industry, again shouldered the task of running the 1920 exhibitions in the two big cities and it was a task.

In New York neither of the halls which housed the 1919 event were available. The Grand Central Palace was used for the passenger car exhibit and the only other building securable of sufficient proportions to get a sizable showing of

trucks inside was the Eighth Coast Artillery armory, something like seven miles away from the Grand Central Palace. It was that or nothing. Better "that" than nothing.

In Chicago the Coliseum and the First Regiment armory were used for displays of cars and the International Amphitheater was engaged for the truck department. It was about four miles from the Coliseum.

No Such Luck in 1920.

The distance between the buildings housing the two exhibits in each city was only one of many handicaps. Both shows were held in January and the weather was of the kind which tries men's hides. All other conditions joined the elements in ranging themselves against the show authorities, and won.

Special efforts were made to bolster up the truck exhibits. There were transportation conferences and other features. The car exhibits were successes, but the truck departments were also-rans of the worst order. The best thing about them was the raising of the hue

and cry which is bringing about individual truck shows for the future.

While in the weather zone it might be well to suggest that one of the most potent reasons why the truck industry should go it alone is that it could pick its own dates, which is a highly important attribute. Pleasure cars are usually bought for spring delivery, the owner being able to do what little driving he cares to do during the winter months in his old car, starting out in gay and giddy equipage when the bluebirds begin to sing.

On the other hand, the truck owner needs the strongest and stoutest machine he can muster for the hard winter grind and is just as apt to buy in the fall or during the cold season as he is at any other time. Consequently the zero hour for the two branches of the automotive industry are not the same and the N. A. C. C. might do well to remember this fact when the date fixing day arrives.

Boston Show a Success.

While the New York and Chicago shows of early 1920 shivered and fliv-

vered, the Boston show of this year went along on high. The only drawback was lack of space, despite the attempt to care for this contingency in an extra building. The Boston show had always been held in Mechanics' building and that commodious structure was secured again this year. It was early recognized, however, that it would not answer the demands and the South armory, which is but a short distance away, was also engaged. Trucks had a niche in both buildings, which is one reason why the show was a success from the truck standpoint. Calls for space were turned down, however. The show scored, the attendance being big, the sales many and the volume of prospects unusually large.

The success of last year's combination show in Boston has no encouragement for a brother act by the two big fields of the automotive industry elsewhere, for neither New York nor Chicago can offer a hall, or adjoining halls, large enough to stage an auto truck show of the magnitude the future demands.

STORAGE BATTERIES FOR WATER, AIR AND HIGHWAY CRAFTS.

The Westinghouse Union Battery Co. has been formed in Pittsburgh, Pa., by men of high standing in their field, and will start production June 1 of storage batteries for automobiles, trucks, tractors, motor boats, airplanes, home lighting, train lighting and railway systems.

The company now occupies three floors of the Union Switch and Signal Co.'s factory, but is preparing to build a factory of from two to three times its present capacity on adjoining property. Its initial capacity will be from 1200 to 1500 batteries a day and work will start with 500 employees. Battery service companies will be established to handle the output in the various districts. The new batteries are said to be designed on original lines which combine simplicity of construction with unusual endurance.

Its financial backing is attested by the list of officers which follows: President, D. F. Crawford, vice president and general manager of the Locomotive Stoker Co.; chairman of directors, A. L. Humphrey, president of the Westinghouse Airbrake Co.; vice president and general manager, T. R. Cook, formerly chief engineer and general production manager of the Willard Storage Battery Co.; vice president, secretary and treasurer, T. S. Grubbs, vice president of the Union Switch and Signal Co.

FRANCE SELLS ARMY TRUCKS.

France has secured \$121,749,755 from the sale of army automobiles and trucks, a larger figure than that obtained by any allied government. American army material sold in France is included in this total.

The freight blockade has delayed materials in reaching Connecticut and a number of highways in that state will soon be impassable unless relief is forthcoming.

Millions to Clean Streets of Snow in New York

New York city is not going to be caught unprepared if the coming winter produces snow storms of the 1919-20 variety. The Board of Estimate and Apportionment early this month voted an appropriation of \$4,127,000 for new equipment to be used for snow fighting purposes by the Department of Street Cleaning. Of this sum it is proposed to use \$2,757,000 to purchase 307 automo-

bile trucks, 600 snow plows, 200 tanks or tractors and 200 flushing machines. The balance will be employed in building repair shops and 22 garages.

Commissioner Macstay, who was backed in his desire for modern equipment by Mayor Hylan, declared that the present machinery of the department was obsolete and practically worthless in coping with big snow storms such as those of last winter, which blocked the streets and stalled traffic for weeks at a time.

The 13th annual convention of members of the American Gas Engine association will take place at Chicago, Sept. 1-3. Farm tractor subjects will be featured.



A Federal Five-Ton Truck Used by Laconia, a Small New Hampshire City, for Street Cleaning—A Very Economical Municipal Equipment.

NEW INDUSTRIAL DEVELOPMENTS

\$230,782,577 Capital Is Invested in 268 Truck Plants

The huge sum of \$230,782,577 is invested in the motor truck industry, according to "Facts and Figures" compiled by the National Automobile Chamber of Commerce.

There are 268 factories, employing 68,180, and 18,336 dealers handle their production.

The total capital invested in the car and truck manufacturing, exclusive of parts and accessories makers, is over a billion dollars. The value of their products for 1919 was \$1,885,112,546. The annual pay roll is estimated at \$374,933,856.

The total volume of motor vehicle parts, tires and accessories wholesale business for the year is estimated at \$3,166,834,594.

The production of trucks for 1919 is given at 316,364 and of cars 1,657,672. The increase in truck production was 39 per cent. and in cars 78.9 per cent.

The registration of commercial vehicles is put at about 750,000. New York state used 119,918 motor trucks, according to these figures. Massachusetts and Pennsylvania each go beyond the 40,000 mark.

The total registration is given as 7,558,848, which is about one car to every 14 persons in the United States. The figures for 1918 were 6,146,617.

VACATIONS WITH PAY FOR ALL CLARK WORKERS.

The Clark Equipment Co., Buchanan, Mich., manufacturer of internal gear axles and steel wheels for motor trucks, will continue its policy this year of granting all employees, including laborers, mechanics and office force, vacations with pay. Vacations will be granted beginning June 1 to all who have been in the employ of the company one year or over.

BENNETT INJECTOR CO. BUYS WOOD INTERESTS.

An announcement of interest to garage men and automobile and truck manufacturers is that the Bennett Injector Co., Muskegon, Mich., has purchased the interests of the A. J. Wood Manufacturing Co., Grand Rapids, Mich., which has been manufacturing the Wood no-valve grease injector, which is designed for pumping heavy grease direct from the original barrel container into gear cases and transmissions.

The Wood injector is quickly and simply attached to any grease barrel, which may be carried on a special truck to any part of the garage or factory. The lubricant can be applied quickly, without handling, where needed and with great accuracy as the pump is gauged to throw exactly one-quarter of a pound of grease a stroke. A special non-drip nozzle instantly stops the flow of grease when the pump ceases to operate.

The Bennett Injector Co., with a capitalization of \$50,000, is already under production in its new plant, with sufficient orders on hand to keep it in operation at its full capacity. Thomas B. Bennett, formerly of the Koebel-Bennett Auto Supply Co., Overland distributor for Muskegon county, is president and general manager.

FILMS SHOWS GOODYEAR TIRES IN PROCESS OF CREATION.

Motion pictures showing the production of tires by the Goodyear Tire & Rubber Co. from the raw material to the finished product will soon be released to the public. At present the film takes 2½ hours to run and will come in for considerable editing. Some of the scenes are laid in Sumatra and Arizona.

AVAILABLE LONG AVAILABLE.

The Available Truck Co. claims a record of more than 200,000 miles for the first truck ever built by the company, which is yet in active service at Chicago.

Service Bulletin Is Issued Monthly by N. A. C. C.

The Service Department of the National Automobile Chamber of Commerce, Inc., has begun publishing a Service Bulletin which promises to be a monthly offering, primarily for distribution to the service managers of the member factories. The department was thoughtful enough not to forget the trade papers and will also see that copies are forwarded to local service associations, automobile schools and other interested organizations and individuals.

"To reduce the cost and improve the quality of service" is the slogan of the Service Department.

The Service Bulletin does not claim to have a corner on all the knowledge of the automobile industry extant and suggests that any cooperation tending to enhance its usefulness will be gratefully accepted. One of its statements in this respect follows:

"This issue of the bulletin represents at least a beginning, giving something tangible to criticize, and, with the help of all those among whom it circulates, it should be possible to improve it materially and rapidly. Write the secretary what it should contain to be more useful to you."

The mission of the publication is to point out ways to secure more economical and efficient vehicle maintenance. It is anxious to learn of practices which have brought these results about and also the pitfalls which have caused a reverse result. Digests of articles from current periodicals will be given, the department's progress will be detailed and questions of interest to service men will be discussed.

The Service Bulletin has a man's errand to run and there is every likelihood that it will get there and back.

CALL FOR WISCONSIN AXLES.

The Wisconsin Parts Co., Oshkosh, Wis., shipped 60 per cent. as many axles in March as during the entire year of 1918. During the past year \$250,000 has been spent in new buildings and equipment. With the added facilities and President W. F. Rockwell, formerly of the Torbenson Axle Co., in active charge, business has boomed during the past twelfth-month.

SERVICE STATIONS CLOSED ON SAT- URDAY AFTERNOONS.

The members of the Milwaukee Automotive Dealers' association are closing their sales rooms, service stations and repair shops at 1 p. m. on Saturdays during June, July and August. Stations were closed May 31 and will also be closed all day July 5.



The A. J. Wood Manufacturing Co.'s Plant at Grand Rapids, Mich., Now Utilized by the Bennett Injector Co., to Produce Wood No-Valve Grease Injectors.

OF FACTORIES AND SALES STAFFS

Highway Motors Co. Is Equipping Plant at Defiance, O.

The Highways Motor Co., Defiance, O., which was recently formed to take over the plants, good will and business of the Golden, Belknap & Schwartz Company, Detroit, and the Fruchery Machine Company, Detroit, is equipping a new factory already erected at Defiance with a complete line of modern machinery which will give the new corporation one of the finest motor producing plants in the world.

Minimum production is to be 150 motors a day on an eight-hour shift with a capacity for twice that number on double shifts. The factories at Detroit will supply present needs until the new factory is in operation. Production will be concentrated on the model "AA" 3¾ by 5-inch, four-cylinder engine heretofore produced by the Golden, Belknap & Schwartz Co., which is used for both passenger car and motor truck service. Orders already received indicate that the new concern will serve many of the leading car and truck manufacturers.

The strong and well balanced organization to conduct the new corporation, which is capitalized under the Ohio laws at \$1,500,000, is shown in the following list of officers:

President, Charles H. Kettenring, Defiance; vice president, R. P. Kettenring, also of Defiance; vice president and chief engineer, E. H. Belknap; vice resident in charge of purchases, J. W. Schwartz; secretary and treasurer, in charge of sales and advertising, J. W. Wright, and factory superintendent, W. R. Fruchery, the four latter gentlemen all from Detroit. In addition to directors, Albert M. Pearson, Defiance; Hon. T. T. Shaw, Defiance; Harold S. Reynolds, a banker of Toledo, and Mr. Fraser of the Guardian Savings and Trust Co., Cleveland.

DETROIT TRUCK PRODUCTION IS BOOSTED IN MAY.

A total of 19,532 trucks were manufactured in Detroit during May, against 15,771 in April. Instead of increasing production faster it might have been closed had it not been for the valuable transportation utility of trucks, which got through the parts and materials necessary to maintain this output.

INTERNATIONAL MOTOR STOCK IS QUICKLY SUBSCRIBED.

Common stockholders of the International Motor Co. quickly subscribed for more than 80 per cent. of the 141,554 shares of common recently offered them and a group of individuals associated with the corporation, headed by Hayden Stone & Co., is ready to take up the balance at \$50 a share.

WINTER TRUCK PLANT EXPANSION.

A building 400 feet long and 60 feet wide is now being erected at the plant of the Winther Motor Truck Co., Kenosha, Wis., will be completed about Sept. 1. This structure will be brick and steel, with concrete floors, the roof of saw-tooth type, with wide skylight extending the entire length.

The building has been designed for high speed production and it will be equipped with every desirable adjunct for economizing time and labor and nothing has been left undone that will convenience and promote the comfort of the workers. The structure will be used for final assembly, painting and inspection of both cars and trucks, the chassis construction being in the buildings now utilized.

The facilities for receiving and shipping will be unexcelled, for the new building is but a few feet from the Chicago & Northwestern railroad and spur tracks extend between the factory units, with platforms at either side for loading and unloading cars. With the addition the company is expected to more than double its production.

INVENTION ALLOWS TRUCKS TO CLIMB SNOW DRIFTS.

Melvin G. Morse of Bath, N. Y., has asked for a patent on a new sleigh runner device which he claims will enable passenger cars and trucks to cut through or surmount even such lofty snow drifts as those of last winter. Frank Wretlof, formerly with the Chevrolet interests, is a partner of Mr. Morse in forming a company to manufacture and market the runners.

S. A. E. UP IN WORLD.

The Society of Automotive Engineers has gone up in the world, removing from the sixth to the seventh floor of the Engineering Societies building, New York city. Its quarters are enlarged, the organization occupying the entire floor.

Selden Officials to Get Advice from Sales Staff

The Selden Truck Corporation has launched an innovation in the automobile industry by the creation of the Selden Advisory Council through which the dealer and salesman will give the benefit of their experience to the company. These representatives of the concern are naturally in touch with the buyer and the new council will form a direct link between the manufacturer and truck owner.

The Selden Advisory Council will be made up of 11 representatives of as many selling districts. These men will be elected from among those who have shown their worth either as dealers or salesmen. They will meet in Rochester, N. Y., as frequently as is deemed necessary and all expenses will be paid. Their deliberations will be private, even officers of the corporation being barred unless invited to attend.

Their meetings will be followed by a gathering of the Division Sales Managers, who will thresh out the ideas advanced. All questions considered at both meetings will then go up to the company officers for consideration. Some plans will be approved and others sent back for further deliberation, with the thoughts of the officers attached.

GMC HEAD SEES BIG FUTURE FOR TRUCKS AND TRACTORS.

President Durant of the General Motors Corporation, which is offering common stock to shareholders and has also arranged to acquire \$36,000,000 in British capital, predicts a big future for trucks and tractors. He declares that before many years the annual production of trucks in the United States will reach 1,500,000. He also thinks it not far distant when the sight of horses drawing plows or other tillage tools will be as rare as a horse and buggy going down Fifth avenue, New York City, today.



The Plant of the Winther Motor Truck Co., at Kenosha, Wis., Which Is to Have More Than Doubled Production with the Completion of the New Unit.

TRUCKS ECONOMIZER OF TIME AND LABOR FOR WATER WELL DRILLER

IN THE service of the Artesian Well & Supply Co., 195 Anthony Street, East Providence, R. I., trucks, which are such a big factor in bringing food from the farm to the table—fresh and at a reduced cost—are playing a big part in supplying pure water that other vital essential of life and health, to the human family.

The worth of this work cannot be too highly regarded when it is remembered that the average person uses five tons of water yearly for drinking and other purposes.

The company use trucks for hauling heavy drilling machines and transporting supplies to various jobs on which it is engaged. In these days of embargoes and slow freight movements the avoidance of delays incident to railroad transportation is mighty important.

At least a day would be required at each end to get the machine on and off a flat car. Time would be lost in hiring teams at Providence and Boston. It would take two or three days for the freight train to make the trip. In addition to time lost there would be considerable labor employed in getting the rig on the train and off. Now a job can be finished in Providence one day and the machine taken to Boston in the afternoon and evening, ready to start on its new work bright and early the following morning.

Trucks to Aid of U. S.

The many government contracts which the company handled during the war could not even have been considered were it not for the transport utility of the trucks.

On some of these the government

its standard pneumatic tire equipment, was the only logical transport.

The little White was loaded with a ton of tools and went whisking away to Barberton. Of course it got there and without a puncture or other mishap. There the truck was loaded with another ton of supplies and tools and came back in the same condition as it started, unwrinkled, unscratched and unpunctured. Only one man was sent and he drove but 12 hours a day, jogging through the round trip in six days.

The Economy of the Truck.

This trip is typical of the economy of the truck in one manner which is not shown on the face of the returns. When prices began to soar skyward and deliveries commenced to lag the company girded itself against emergencies by laying in a mountainous stock of pipe, drilling and fishing tools of all kinds. Ordinarily a call for tools at a point as far distant as Ohio would have resulted in an order to some Cleveland house to furnish the necessary equipment. It was naturally much cheaper for the company to send a truck load of tools secured at less than half present prices, than to buy new ones near the job at sky-high rates.

This same principle has been carried out on other jobs, particularly those nearer home, as in New England and New York state. Every bit of work done by the company is equipped with tools carried by truck from headquarters, which gives the company the advantage of its foresight in stocking up with machinery at pre-war costs.

Drive Pipe to Greece.

The management does not hesitate to call for outside trucking help when necessary. During the present month an order was received for nine tons of six-inch drive pipe, which the company had stored at Reading, Pa., for use in Greece. The concern had supplies in Providence which were needed in New York and some in New York needed at Providence. A 7½-ton Mack truck was hired for \$300 to carry the supplies to New York City, go to Reading and get the nine tons of drive pipe, deliver it at the Brooklyn, N. Y., pier and carry a return load of supplies to Providence. The big Mack traveled 630 miles and was back in Providence—its work done to a turn—in five days. Two drivers were used and they kept the truck moving 13 or 14 hours a day at an average speed of about 15 miles an hour.

This pipe was purchased by the Holstrans Co. of New York City, which has a contract for drilling a large number of artesian wells in Greece. The word "artesian," by the way, comes from Europe, it being taken from Artois in France, where deep wells were sunk in the 18th century, water being found in such abundance that it overflowed and rose to considerable heights owing to the natural pressure. This was the second consignment furnished by the Providence com-



One of Three ¾-Ton White Trucks in Service of Artesian Well & Supply Co. One of Which Has Been Driven Over 300,000 Miles.

Only the other day one of the concern's trucks journeyed from Providence to Barberton, a suburb of Akron, O., with a load of supplies.

W. Vernon Harris, general manager and assistant treasurer of the Artesian Well & Supply Co., declares without hesitancy that the company could not carry on its business on anything like the extensive scale it is conducted today without the use of trucks.

When Time Is Money.

The company recognizes that time is money and that time lost can never be regained. Today one of its trucks will bring a heavy drilling machine, the principal unit in well drilling, from the Providence headquarters direct to the site of a Boston job in eight hours. It would take the best part of a week to get this machine to its destination before the advent of the trucks, or by freight transportation nowadays.

called for the beginning of work within 24 hours of the signing of the contract. Much of the drilling was to be done in the neighborhood of New York City. The nation's metropolis is anywhere from two to 10 days away from Providence by freight. Trucks bring the big city within the 24-hour zone.

An Emergency Call.

In any emergency the company turns to its trucks. Out in Barberton, O., 16-inch wells are being dug for the Columbia Chemical Co. This job has been under way since last October and the 13th well is now being drilled. Each of these produces 1500 gallons of water a minute. About the middle of the present month drilling tools were needed at that point. But for the 200-pound express limit these might have been sent by express. Several weighed over that total, however, and a ¾-ton White truck, with

pany for shipment to Greece, 2500 feet having been previously shipped.

Manager Harris might have tackled this job with his five-ton Packard, but he figured the saving would be comparatively slight, hardly enough to offset the wear and tear on his machine, and was satisfied that the renting of an outside truck would be the cheapest method in the long run.

A 300,000 Mile White.

The company has six trucks, a five and a 3½-ton Packard, which machines are used mainly in individually hauling the 27 Star drilling machines owned by the concern to the points where they are to be put to work. The other four machines are Whites, three of ¾ ton capacity and one a two-tonner, which is now at Barberton.

None of these trucks is new, but all are nearly as good as new. The 3½-ton Packard has been on duty since 1912 and the five-tonner since 1915. Both are in good shape. Three of the Whites have been in service five years and the other, one of the ¾ tonners, has wintered and summered with the firm for seven years and has been driven over 300,000 miles. It has been overhauled but once in that time. Manager Harris would not take \$1000 for it today.

Drills Wells in Cuba.

The Artesian Well & Supply Co. is one of the largest and best equipped well drilling concerns in the country. Its operations extend from Maine to Cuba, much of its work being done on Long Island, where conditions are especially favorable for an abundant supply of pure, clean, cold water. At present no jobs are under way in Cuba, but much has been done on that island in the past and its machinery is still there. One handicap in Cuba is the inability to use trucks, even horses and wagons being tabooed in many instances. Within 10 miles of the congested points travel is by horseback.

The well driller owes his knowledge of the special tools and equipment required to drill into the solid rock to the oil industry. Col. E. L. Drake drilled the first well for petroleum at Titusville, Pa., in 1858, this also being the first instance where an iron pipe was driven from the surface down to the solid rock, shutting out surface pollution.

Drilled wells are the latest scientific means of securing a natural pure water supply. There is more water under than above the ground. The modern way to obtain this underground water is to drill down into the solid rock where water is constantly flowing through the seams in the rock strata. Surface wells are subject to contamination and are liable to shut up shop in dry weather. The drilled or driven well has neither of these handicaps. A well properly drilled lasts forever.

The Truck's Lofty Mission.

In this great work of supplying mankind with the kind of water which passes through nature's filter, and is purest of all, the Artesian Well & Supply Co. of Providence takes high rank.

That the company can give an exceptional service with reference to time is

mainly due to the use of trucks. The four smaller vehicles used by the concern transport the pipe, drilling and finishing tools and other supplies to jobs almost before the ink on the contracts is dry.

The 27 Star drilling machines owned by the company range in weight from five to eight tons. These machines are hauled as trailers by the five and 3½-ton Packards on all jobs within a radius of 75 miles from Providence, the larger truck naturally taking the heavier machines. On these hauls the trucks are usually given a generous load of tools, pipes and other equipment, the latter sometimes including a boiler, as in the accompanying illustration.

Among the leading institutions and individuals for which the company has drilled wells are the cities of Brooklyn, Yonkers and Jamestown, N. Y.; the towns of Glen Falls and Bloomingdale, N. Y.; the Larchmont Yacht club, the Oakwood Seminary, Brooklyn Y. M. C. A., St. Andrew's Golf club, Blind Brook Golf club, Meadow Brook club, Greenwich

ing 400 feet. At Camp Upton, N. Y., six wells were dug in six weeks of an average depth of 300 feet. Many wells were drilled at Fort Adams, Fort Greble and other Rhode Island forts.

Trucks are not the only unit produced by the automotive industry to which the Artesian Well & Supply Co. pays tribute. Manager Harris pooh-poohs the cry that automobiles are non-essentials. While the trucks are taking the drilling machines, tools and other equipment to a job the company's Ford touring car is shooting over the highways with a human burden. The car gets a half dozen men on the job ready to man the machinery when the work with the trucks has been completed.

CALIFORNIA HIGHWAY WORK PUT OVER TWO YEARS.

California's big highway programme, for which a bond issue of \$40,000,000 was voted, will not be carried out for two or three years because of present conditions



Artesian Well & Supply Co. Camp in Cuba—Inability to Use Truck Is Company's Only Objection to Working in That Country.

Country club, Cluett, Peabody & Co., Diamond Match Co., Oliver Iselin, Howard G. Brokaw, Blanche Bates, Otto H. Kahn, F. H. Hiscock, J. Stuart Blackton, Frank Doubleday, Lloyd C. Griscom, I. N. Phelps Stokes and hundreds of others.

A Big Standard Oil Job.

One of the biggest contracts that the company has today and one of the biggest it has ever had is the drilling of wells for the Standard Oil Co. at its refineries at Providence. The proximity of this job to headquarters makes this task a reasonably easy one. Already 13 wells have been drilled, averaging from 700 to 900 feet in depth and each producing from 100,000 to 700,000 gallons a day.

During the war the company was frequently called on by the War Department and usually the contract carried a clause that the work must be started within 24 hours of the signing of the contract. Only by the aid of trucks was this performance possible. At Camp Mills, Long Island, 18 wells were drilled in seven months, the average depth be-

ing in the financial and material markets. The bonds voted were 4½ per cent. and cannot be sold at par now. Present contracts will be completed and some of the counties will buy enough of the bonds to do work vitally needed.

POWELL A LIVE ONE YET.

Bill Powell who pitched for Pittsburgh when that team won the world's championship in 1909, is holding down the first bag on the All-Star Goodyear team at Akron and his playing today would make many a big leaguer ashamed of himself. Bill is shift foreman at the Akron plant.

NEW JACKSON QUARTERS.

The Jackson Motors Co. of New England has new headquarters at 18-22 Brighton avenue, Boston, and is handling International commercial vehicles and FWD trucks.

SIDE LIGHTS ON TRANSPORT USE

Army Motor Convoy's 3960-Miles March to Los Angeles

Thirty-four trucks, nine passenger cars and six motorcycles made up the army transcontinental motor convoy which left Washington, D. C., June 14, on a journey of 3960 miles to Los Angeles, Cal., where the command are due Sept. 17. It will travel over the Bankhead national highway. The motor train is manned by 20 officers and 160 men.

Secretaries Baker, Daniels and Alexander were present when the army motorcade got under way. The cabinet officials made brief addresses, emphasizing to the men the importance of national highways as elements of defense and as industrial factors.

Supervision of the convoy is under the Motor Transport Corps. It consists of a Motor Transport unit complete, at war strength; one Service Park unit, at war strength; detachment from Engineer Corps and detachment from Medical Corps. All motor trucks are 1½ tons capacity equipped with pneumatic tires. The tour will pass through the following states: Virginia, North and South Carolina, Georgia, Alabama, Mississippi, Tennessee, Arkansas, Texas, New Mexico, Arizona and California, ending at Los Angeles.

The purpose of this and other overland trips is to study the handicaps which surround the transportation needs of the army on account of the lack of dependable and definite systems of highways; to secure data relative to the use of various types of motor vehicles; to secure relative data on solid and pneumatic tires; to train officers and men in extended field operations and to recruit personnel for the various branches of the army.

Such study by the Motor Transport Corps will be of great value to the entire country because it will thoroughly establish the necessity of the Federal

government undertaking the construction and maintenance of a definite system of national highways.

GOODYEAR GETS HUGE AIRSHIP FOR AIR FREIGHTING.

The Goodyear Tire & Rubber Co. has purchased from the United States government a 320,000 cubic feet airship of the Chalais-Maudon type, built in France for the United States navy, and will use it in establishing America's first dirigible aid line for carrying mail, freight, passengers and express. The ship has a capacity of 30 passengers on short trips and its twin motors of 250 horsepower each develop a speed of 55 miles an hour.

The huge ship will reach this country in a few weeks and will be assembled at the Wingfoot Lake aviation station, near Akron. It will be immediately put in service. Daily trips on a 150-mile air line route between Akron and Detroit are planned in the fall. No passengers will be carried on the early trips, it being decided to develop the mail, express and freight end of dirigible transportation in order to determine schedules, runs and costs. A mooring station will be used in lieu of a hangar at Detroit. Goodyear's aeronautics department will also make its headquarters at Wingfoot lake, where 100 men are now being trained to man the air transports.

ACCIDENT PREVENTION PLANS.

The Underwriters' Laboratories, with the assistance of the National Safety Council, is carrying on extensive experiments with appliances for the prevention of automobile accidents, which cost 10,000 lives and millions of dollars annually. The use of laminated glass for wind shield construction, wind shield cleaning appliances, the construction of steering gears and the entire subject of lamp dimmers and diffusers are involved in these tests. In the meanwhile the National Safety Council is making a study of all traffic accidents.

New Motor Laws Now Effective in New York State

In addition to the Ferris bill, which prohibits motor trucks on highways outside of cities from having a greater width of body, inclusive of load, than eight feet, or a height of more than 12 feet six inches, or a combined weight of more than 25,000 pounds, the State of New York has six other new motor vehicle laws, all signed by the governor, as a result of the recent session of the Legislature.

These are:

The Gillett measure which requires that all motor vehicles be equipped with approved lights before registration is granted. The applicant must name the lens or device used on his application and make affidavit to the same.

The Lusk bill allows other than licensed chauffeurs to operate cars used to carry children to and from school outside of a city. Such cars may be registered as passenger vehicles rather than omnibuses.

The Mackerell bill makes it a misdemeanor to remove or change the distinguishing number or identification mark on an automobile.

The Knight bill defines a commercial vehicle and makes it possible to register suburban cars, equipped to carry goods, wares and merchandise, as a passenger and not a commercial vehicle.

The Wheelock bill increases the price for special number plates for use on omnibuses where it is desired to have such cars appear as though privately owned.

Another Wheelock bill does away with any four-cylinder pleasure car being licensed for less than \$5 or any six-cylinder car for less than \$10, regardless of age.

TRUCK GROCERY STORES.

The proprietor of a string of grocery stores in northern Ohio has established a system of motor truck grocery stores. Groceries are carried to the farms and eggs and farm products taken back to the city. In this way the cost of living is cut for both the farmer and the city man. Each truck store is 16½ feet long and 6½ feet wide, fully equipped with shelves, glass cases, bins, refrigerator, scales, cash register and counters.

EXHIBITS WHALE ON TRUCK.

A mammoth whale, said to be 230 years old and weighing 31,000 pounds, was washed ashore near Pablo Beach, Fla., recently and is now being exhibited through the southern part of the country, mounted on an Indiana truck, equipped with Goodyear tires. The whale was 49 feet long, its jaw bones 12 feet long, and the capacity of the mouth was 20 bushels. The skeleton weighs over two tons.



The Unusually Attractive Garford Truck Equipped for the Sale of Fruit, Vegetables and Fish by a Japanese Vendor in Berkeley, Oakland and Alameda, Cal.

Garage and Service Station Machinery Tools and Equipment

DEMOUNTABLE RIM TOOL.

The Fairbanks Co., Broome and Lafayette Streets, New York City, is selling agent for the Duplex Rim Device, a tool designed to facilitate the removal and replacement of pneumatic tires on demountable rims of the split type. The device consists of two arms operated by a powerful lever, pinned at the center and working on an eccentric.



It is stated that the work of removing or replacing a tire on a demountable rim is greatly expedited with this tool. The tool is made unusually heavy throughout, and folds into small space for carrying in the tool box.

ELECTRIC VALVE GRINDER.

The Kalamazoo Railroad Supply Co., Kalamazoo, Mich., manufactures the Jackson Electric Valve Grinder for garage or service station use. The company maintains that during the war this special grinder was proven with reference to endurance under rough usage. Claim is made that with it a repairer can grind a valve to a perfect seat in from 15 to 30 seconds. The outfit can



be driven from any light fixture. The motor is a special design, adapted for either direct or alternating current, and consumes approximately 75 watts. The casing is aluminum alloy and all working parts, the motor shaft and grinding spindle, operate in phosphor bronze bearings.

The grinder has capacity for valves up to 3½ inches, and with special attachments that can be purchased it can be used for grinding valves of overhead valve engines.

NO-VALVE GREASE INJECTOR.

The Bennett Injector Co., Muskegon, Mich., makes the Wood's No-Valve Grease Injector, which is designed to be inserted into a barrel of grease or oil and wheeled to any part of the service station for oiling or greasing the units of a passenger car or truck. The pump has a capacity of one-quarter pound of

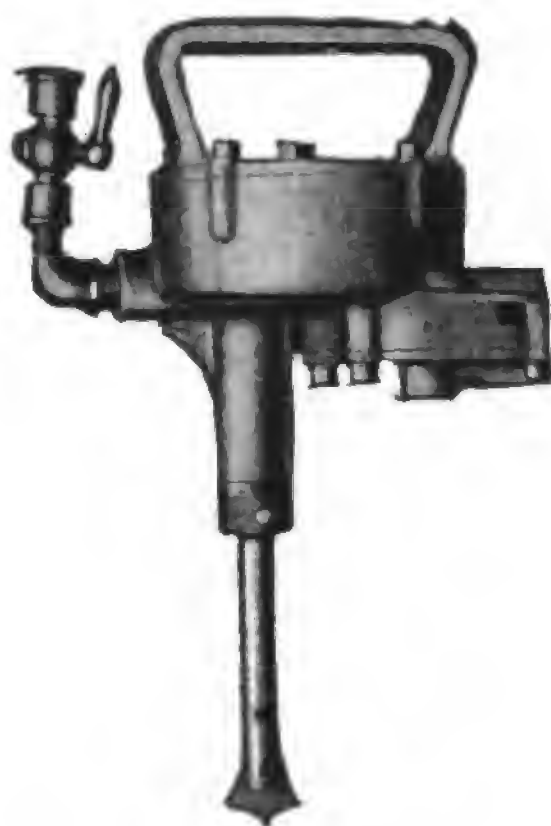


grease per stroke and claim is made it will not leak grease or oil after pumping, as a special non-drip nozzle instantly stops the flow of grease or oil.

Wherever used the Wood's Injector has proven a time and labor saver, the manufacturers stating that 12,000 outfits are now in use.

AIR DRIVEN VALVE GRINDING TOOL.

The Kalamazoo Railroad Supply Co., Kalamazoo, Mich., manufactures a series of valve grinders and drills, among which is a pneumatic valve grinder which can be operated from the shop pressure air system, cutting the operating ex-

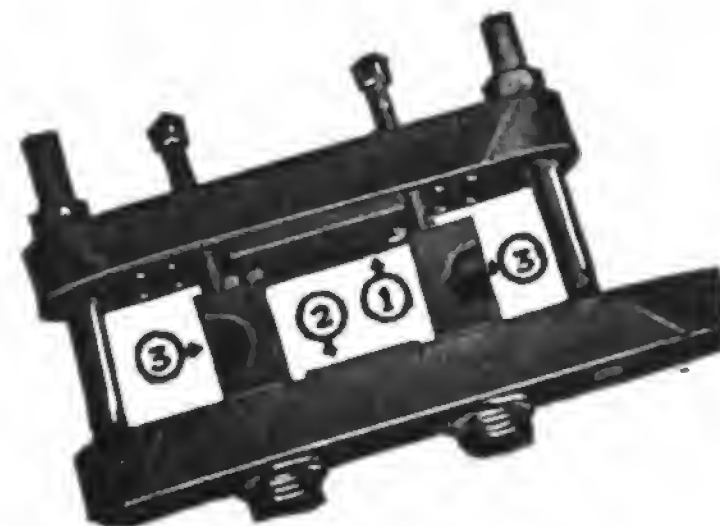


pense, which in shops doing considerable valve grinding is a considerable item.

The capacity of the grinder is valves up to 3½ inches diameter. All working parts, such as the motor and grinding shafts, operate on phosphor bronze bearings, while all the steel wearing parts are hardened.

NEW ABRASIVE TOOL.

The Atlas Manufacturing Co., Pittsburgh, Pa., manufactures Atlas Abrasive Tools, which are designed for repair shops and garages. The tool is small, inexpensive and easily operated. With this tool claim is made that a repairer can cut and polish pins that are rough-



ened or scored with fully as good results as those attained by hours of labor on a lathe.

Only one cutter is used in the device and each cutter blade is claimed to be good for from 10 to 20 jobs. Because of the small size of the tool claim is made that work can be done on crank pins without removing the crankshaft.

ONAN TESTING STAND.

David W. Onan, 1224 Penn Avenue, Minneapolis, Minn., builds a new type testing stand known as the Onan Testing Device, equipped with the necessary apparatus to drive and test various electrical units after removal from the engines, which is especially adapted for garage and service station use.

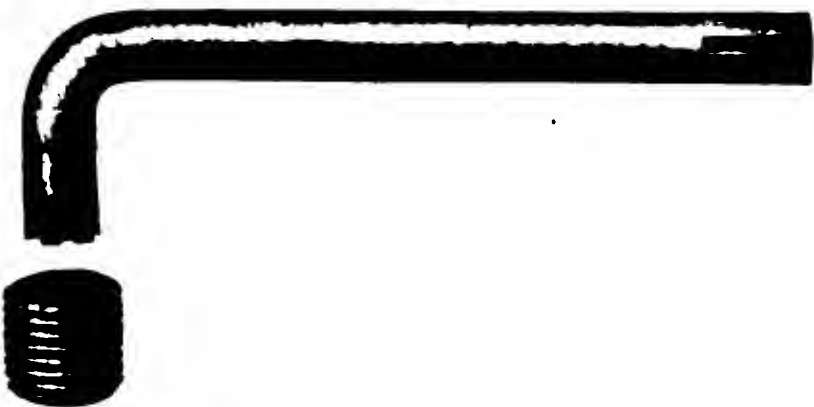


Provision is made for connecting a storage battery into the testing circuit with the generator, while an ammeter will show the condition of the generator under test. A round leather belt provides the final drive to the generator or motor. The apparatus is said to be noiseless in operation.

New Motor Truck Accessories and Supplies

NEW TYPE SET SCREW.

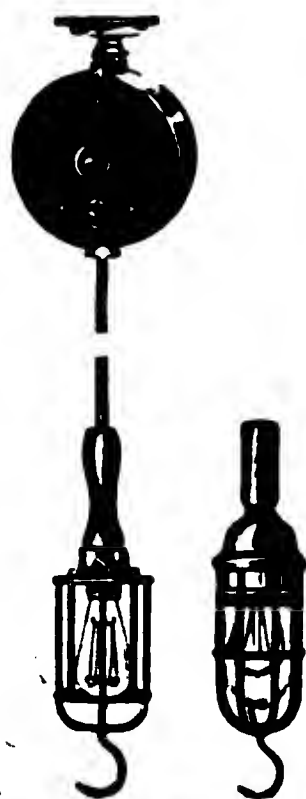
The Bristol Co., Waterbury, Conn., manufactures a patented utility known as the Bristo safety set screw, which is designed to take the place of other type



set screws. It is light of weight, perfectly machined and claim is made it will lock and hold parts fastened with it more securely than any other form of screw. The screw is manufactured in sizes to meet a general demand for set screws.

REEL FOR ELECTRIC LIGHT CABLE.

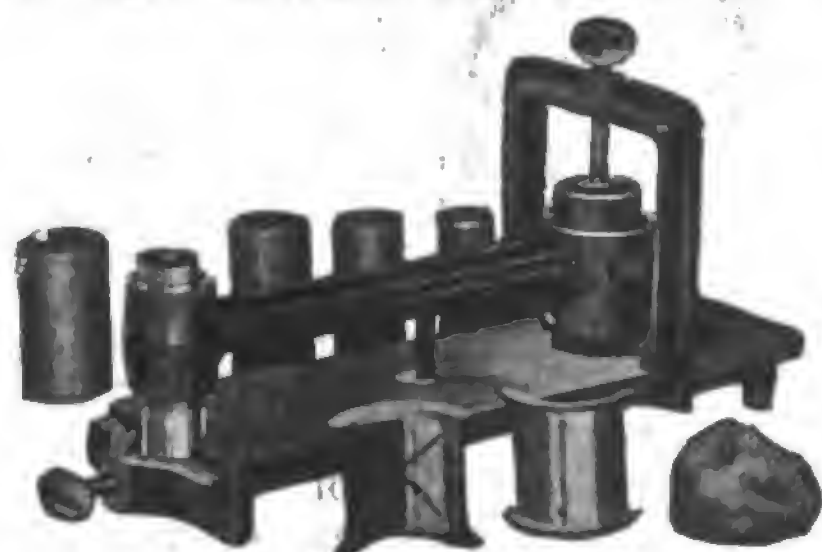
The Anderson Electric Supply Co., 118-24 S. Clinton Street, Chicago, Ill., manufactures the Reelite, a device which automatically reels the cord of the electric drop light whenever desired. The



device is fastened to the ceiling or other convenient point and is fitted with the regular extension cable and electric light fixture. A Reelite occupies little space and its use is a practical lighting economy.

REBABBITTING JIG.

The O. A. Bremer Co., 222 Division Street, Burlington, Ia., manufactures rebabbitting fixtures, a new type being the N-A Size Rebabbitter, which, it is

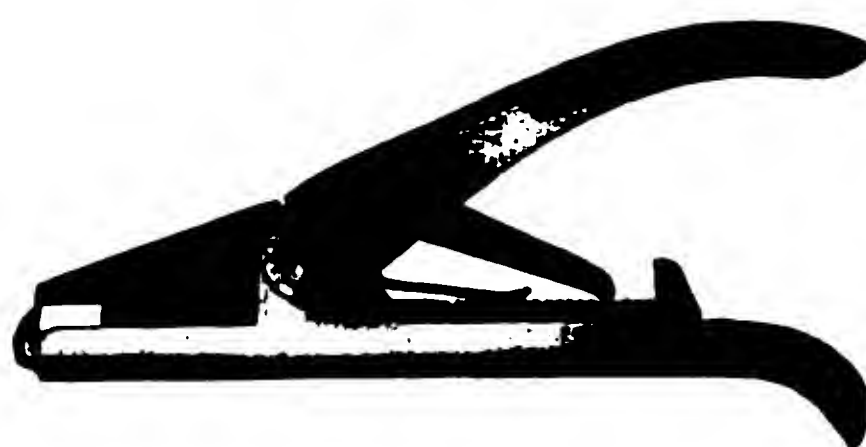


claimed can be used for work with any size of automobile engine connecting rod

bearing up to 12½ inches length from center to center, and of any bore from ½ to 2½ inches. It casts the bearing very accurately to the size required, either solid in the rod or the removable type, and but very little scraping or fitting is required to perfectly fit a crankshaft.

COTTER PIN EXTRACTOR.

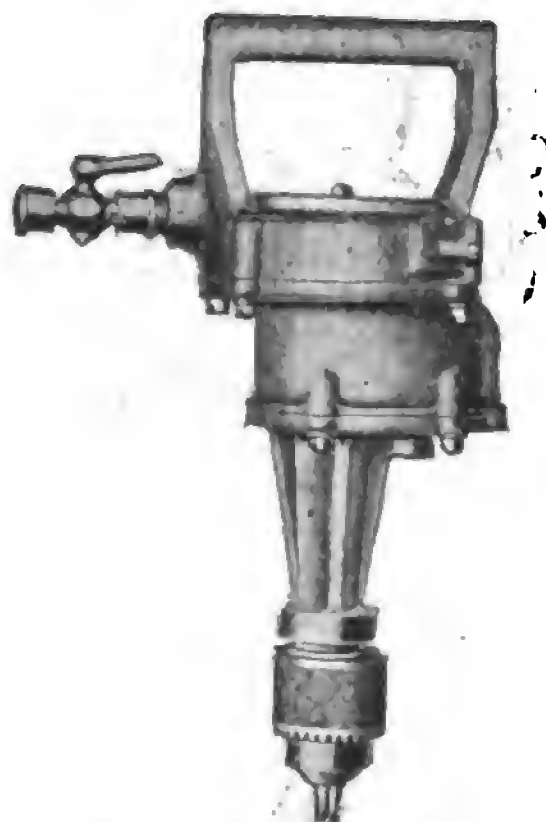
The Brewer-Titchner Corporation, Cortland, N. Y., manufactures the Mat cotter pin puller, a tool needed in all service stations, for with it inaccessible



ble cotter pins may be easily removed or replaced. The tool is light in weight and occupies but little space. It is designed to reach into inaccessible places, hook into cotter pin eyes and locks in such manner that the pin is removed without the tool loosening until the worker desires.

PNEUMATIC DRILL.

A useful shop tool for automobile mechanics is the Jackson pneumatic drill, manufactured by the Kalamazoo Railway Supply Co., Kalamazoo, Mich. It is designed to be operated by connection with the air pressure supply system of the garage or service station, and where much drilling is done is a large economy, as air is used as the source of power. The tool works satisfactorily on pres-



sures varying from 80 pounds when drilling a ⅜-inch hole to 110 pounds when drilling a ½-inch hole in steel.

The casing is constructed from tough aluminum alloy, while the gears are made from heat treated steel. Normal ball bearings carry the high speed shaft, while bronze bushings are used for the slow speed spindles.

COIL TESTER.

The Bestall Electric Co., 14 East Jackson Boulevard Chicago, Ill., manufactures the Bestall Coil Tester, a device designed for service station repairers, its chief



utility being that coils that have become short-circuited or damaged can be tested on the truck, obviating the labor of removing them. The tester is equipped with the necessary leads to connect it to a battery and to the coils under test.

REBABBITTING JIG FOR FORD ROD BEARINGS.

The O. A. Bremer Co., 222 Division Street, Burlington, Ia., manufactures a series of babbitting tools that should find a place in service stations specializing



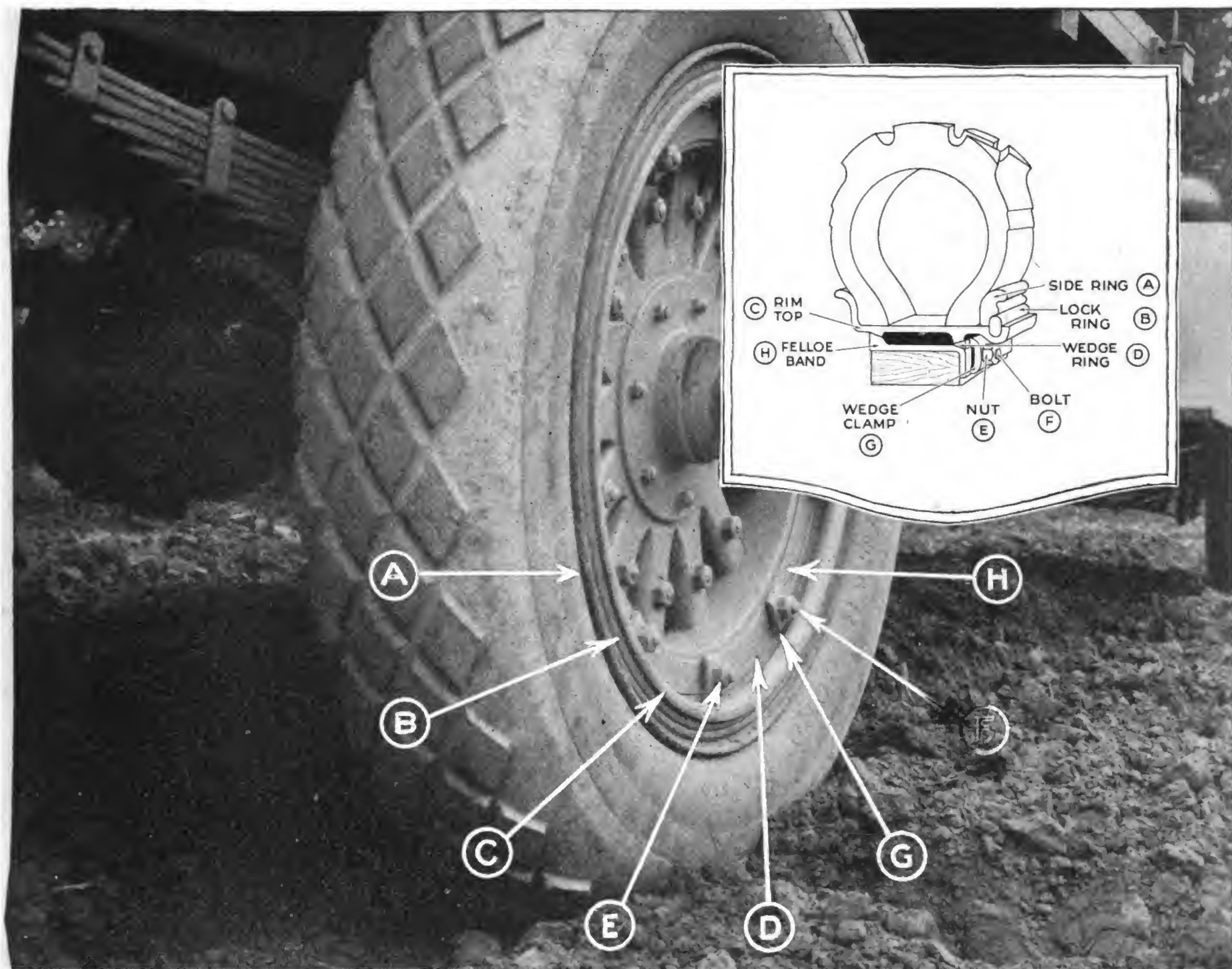
Ford work. The babbitting fixture is especially designed for restoring Ford connecting rod bearings and with it time and labor is saved to the repairer and truck owner and repair expense is correspondingly reduced.

PATENTED DUST CAP.

A. Schraders' Son, Inc., 783-91 Atlantic Avenue, Brooklyn, N. Y., manufactures the newly patented Kwik-On-An-Off dust cap, designed to fit all Universal and Schrader valve stems. The cap can be instantly removed or replaced on a valve



stem and a turn of the cap will either lock it, giving it a twist firmly in place, or release it. It is claimed to be a decided improvement over other caps, produced by this firm, and its use will save time for the tire repairman.



Copyright 1920, by The Goodyear Tire & Rubber Co.

Simple, Rigid Truck Rims That Lock and Unlock Easily

THE enormous popularity achieved by the straight side type of tire pioneered by Goodyear has been shared at all times by the straight side type of rim also pioneered by Goodyear.

So fundamental were the simplicity and stability of this original Goodyear rim that certain of its characteristics have been preserved in the straight side rims of today.

However, the present Goodyear rim alone contains the original locking device, now of extreme value in the large rims built for trucks.

This oval lock ring affords unusual ease of operation, yet is

tremendously rigid when engaged; is an advancement that has come out of that constant endeavor to improve, which protects our good name.

These facts make apparent, therefore, why motor truck manufacturers have given very substantial recognition to Goodyear Truck Rims, made in all sizes and in the demountable and detachable types, providing a rim for every need.

Further information about these easily operated Goodyear Truck Rims can be obtained by writing direct to The Goodyear Tire & Rubber Company, Akron, Ohio.

GOODYEAR
TRUCK RIMS

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

**TRUCKS TO CATCH UP WITH CARS
IN VOLUME OF SALES.**

The Kissel Motor Car Co. distributors and sales managers held a peppery convention in Milwaukee, June 2, 3 and 4. It was the sentiment of the gathering that the motor truck business threatens that of the passenger car in total sales volume. By the new Kissel plan the distributors, who are on the ground with the buyer and know what the public wants, virtually direct the policy and production of the factory.

The company divided the country into zones and made the best distributor in each zone responsible for that territory. Every three months these distributors meet to discuss business conditions, new models, features, accessories, new methods and ideas for bettering service and all other details and activities necessary to render the public 100 per cent. cooperation in the matter of buying and using automobiles and motor trucks.

CINCINNATI FIGHT GOES ON.

The battle between truck manufacturers, machine shops and garages on one side and machinists and mechanics on the other which has waged in Cincinnati for weeks has reached its bitterest stage, the 700 motor workers and the hundreds of machinists putting two truck plants and 26 garages on the union labor "unfair" list, while the city's truck and automobile manufacturers announce they will open on or before July 1 with a full force and will refuse to recognize the labor unions.

TRUCKS ADD TO COAL OUTPUT.

The coal producing states are leading the van in road improvement, Pennsylvania appropriating \$50,000,000, and Illinois \$60,000,000, while Kansas, Missouri and West Virginia are soon to vote on \$60,000,000 bond issues. It is estimated that by bringing a large expenditure for road building in Ohio the motor truck has increased the output of the pit coal mines from 141,446 tons in 1914 to 2,739,000 tons in 1918.

KISSEL TRUCKS HAUL TRUCKS.

Not only Kissel cars but Kissel trucks have been carried on Kissel motor trucks from the Kissel factory at Hartford, Wis., to New York city, a distance of 1200 miles. Other noteworthy driveways were made, a surprising feature in this connection being that cost figures show that the expense was little different from that involved in sending these machines over the railroads.

GOODYEAR FOR METRIC PLAN.

The Goodyear Tire & Rubber Co., Akron, O., is a staunch advocate of the metric system of weights and measures and the new Goodyear plant at Los Angeles will be put entirely on a metric standard basis.

**WILLYS PRESIDENT OF REPUBLIC
TRUCK CO.**

The Republic Motor Truck Co., Alma, Mich., has elected John N. Willys president, he succeeding F. W. Ruggles, who has retired from the organization. Mr. Ruggles was the organizer of the company and was mainly responsible for its development to a point where it was claimed to be the largest producer of trucks of the industry.

Last November Messrs. Willys and Ruggles, with W. J. Baxter, acquired a majority of the stock of the company from Cleveland interests, this carrying with it control of the Torbensen Axle Co. Shortly after that Mr. Willys was elected chairman of the board of directors, in which capacity he served until



John N. Willys, Elected President of the Republic Motor Truck Co.

the retirement of Mr. Ruggles. No announcement has as yet been made by Mr. Willys relative to the future of the company, which has thus become one of the properties directly under Willys control, which includes the Willys-Overland, Inc., the Moline Plow Co., the Electric Auto-Lite Corp.

**HALF YEAR REPAIR BILL FOR 42
TRUCKS IS \$1 EACH.**

The Ralph F. Schneider Auto Truck Sales Co., Detroit distributor for Bethlehem trucks, kept track for six months of 42 Bethlehem trucks recently sold in that city and found that the total service expense for that period was \$41.65, which included a new steering post, a front wheel bearing and a new distributor. Carelessness of drivers could well account for all of these damaged parts.

**\$25,000,000 FOR MISSISSIPPI HIGH-
WAYS.**

Mississippi is considering a highway bond issue of \$25,000,000, to which there is a companion bill providing for an increase in motor license fees, the maximum to be about \$25.

**PULCHER CALLS FOR CHANGING OF
OIL IN ENGINES.**

M. L. Pulcher, vice president and general manager of the Federal Motor Truck Co., Detroit, Mich., is advocating a campaign calling attention to the necessity of changing oil in engines every few hundred miles. He contends that failure to take this action is the cause of the deterioration of engines. He states that there is so much kerosene in gasoline today that it has a tendency to run down past pistons, get into the lubricating oil and thin it. The kerosene cuts the thin film on the wearing surface of the pistons, piston rings and cylinder walls.

**TRUCK DRIVERS AND HOLDUP MEN
IN COLLUSION.**

Investigations appear to show that recent frequent holdups at Bristol, Pa., of trucks operating between Philadelphia and New York City were due to collusion between the drivers and robbers. Police witnessed one transaction, in which a light delivery truck followed a heavier vehicle, the two stopping at an unfrequented point, where the goods were transferred from the larger machine.

**GOV. BROUGH HEADS GOOD ROADS
ASSOCIATION.**

Gov. Charles Brough of Arkansas has been elected president of the United States Good Roads association. The vice presidents include the following governors: Carl E. Milliken, Maine; C. A. Larrazola, New Mexico; T. M. Bickett, North Carolina, and Lee M. Russell, Mississippi.

**SELF-STARTERS ON TRUCKS A BIG
GASOLINE SAVER.**

Installation of starters on trucks, the more careful adjustment of carburetors and increasing mileage efficiency of cars and trucks, coupled with the greater production certain to come from increased drilling for crude oil, should relieve the gasoline situation within another year, according to information furnished at the annual meeting of the National Automobile Chamber of Commerce in New York city June 3.

S. A. E. HEARS TRUCK TALKS.

Two papers to be read at the summer meeting of the Society of Automotive Engineers at Ottawa Beach, Mich., June 21-25, deal with the motor truck. One of these will be "Highway Transportation," by G. A. Green, and the other "Proposed Work of the S. A. E. Transportation Committee," by F. W. Davis. They will be heard at the transportation session June 23.

CHICAGO PLANS LOAD LIMIT.

Chicago is considering the passage of an ordinance limiting truck loads to five tons in that city. Overloading has been the cause of the agitation which brought about the introduction of such a measure.

Thru the **EISEMANN** Magneto

107 Truck Manufacturers Secure Perfect Ignition



"Who's Who" in Truck Manufacture

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*American La France
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THE
EISEMANN
MAGNETO CORPORATION

Brooklyn, N. Y.



(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

FROM EVERY ANGLE OF VIEW

"Jay Walking" Drive to Be Launched at St. Louis

St. Louis is planning to make traffic laws for the pedestrian as well as the autoist. An ordinance is to be introduced in the board of aldermen making the pedestrian amenable to the signal of the traffic officer just as is the truck driver. The St. Louis Safety Council and a majority of city officials are backing the movement. The Safety Council and the public utilities of the city are getting ready to conduct a "jay walking" campaign as soon as the ordinance has been enacted.

PNEUMATICALLY SHOD TRUCKS IN DEMAND.

More than 50 per cent. of the output of the Napoleon Motors Co., Traverse City, Mich., is pneumatically equipped. Sales Manager C. D. Peet is also authority for the statement that the demand for trucks from two tons downward is increasing at such a rate that the proportions is today $2\frac{1}{2}$ to one against $1\frac{1}{2}$ to one, the latter figure being furnished by the National Automobile Chamber of Commerce two years ago.



Haulage Equipment That Meets the Need for Economical Transportation

The greatest need of today is economical transportation. The factory must have raw materials; the finished products must reach the distributor or the shipping station; the distributor must get his goods to the user.

The distribution of merchandise must be so accomplished as to save time and expense. The means of transportation must be made equal to the demands of the business.

Fruehauf Trailers and Motor Trucks

have proved the solution of haulage problems for manufacturing and mercantile houses.

Trailers provide the carrying capacity which is needed to make full use of the pulling power of motors.

Fruehauf Trailers are built in Four-Wheel and Semi-Trailers types. They double and treble haulage capacity without increasing the operating costs.

Send for the Fruehauf Catalog

FRUEHAUF TRAILER CO.

1301 Gratiot Ave.,

Detroit, Mich.

OWNERSHIP OF "UNIVERSAL" TO BE DECIDED.

The Federal Trade Commission has asked the Universal Motor Co., Oshkosh, Wis., and the Universal Products Co., Sandusky, O., to show cause why they have not used unfair methods in interstate commerce, it being claimed that their merchandising of lighting plants throughout the country is in competition with the business of the Universal Battery Co., Chicago, which in 1913 took over the business rights and trade name of the Universal Storage Battery Co., which had been engaged since 1911 in selling electric storage batteries and isolated electric lighting plants for farm use.

GRANT WILL CONCENTRATE ON ONE TRUCK.

The Grant Motor Car Corporation, Cleveland, O., will in future concentrate its endeavors on the production of one truck chassis, which will be known as model 17. The models discontinued are 10, 11, 15 and 16. Model 17 is a speed truck, 140-inch wheelbase, having a Continental engine with $3\frac{3}{4}$ inches cylinder bore and five inches stroke, rated at 22.50 horsepower by the S. A. E. formula. The engine is a four-cylinder L head type, that is cooled by a thermo-syphon circulation of water through an armored cellular radiator and lubricated by a combination forced feed and splash system, equipped with an automatic float feed carburetor with vacuum fuel feed, a Dixie magneto, a Pierce governor and a Remy engine starter. The engine and a Brown-Lipe multiple disc dry clutch and a Brown-Lipe transmission gearset are combined in a unit power plant.

The transmission gearset has four forward speed ratios and reverse and the drive is by a Torben-sen internal gear driven rear axle. The frame is pressed steel channel section and is suspended on semi-elliptic springs. The wheels are wood, artillery type, shod with pneumatic tires, 35 by five inches forward and 38 by seven inches rear. The steering gear is a Jacob.

Transportation Owned by Government Is New Party Plank

The "Committee of Forty-eight" is planning to launch a third party on the platform of government ownership of transportation, grain elevators, terminal warehouses, natural resources and stockyards. The party would favor the taxation of idle land, labor's efforts to share in the management of industry and the complete restoration of free speech, press and assembly. The promoters of the new party claim that many farmers have joined the fold. Among those favored as presidential and vice presidential candidates for the new party are Senator La Follette, Governor Lynn Frazier (Non-Partisan League) of North Dakota, Frank P. Walsh and Chief Justice Walter F. Clarke of the North Carolina Supreme Court.

STATES IN DRIVE TO PREVENT TRUCK OVERLOADING.

Both Connecticut and New Jersey are hot on the trail of truck owners who have been overloading their vehicles on the ground that this is decidedly wearing of highways. In Connecticut trucks have been held up and forced to transfer their loads to the railroads. In New Jersey, however, 37 trucks were alleged to have contained excessive loads and their owners were summoned to court. The present agitation for an increase in fees for commercial trucks in New Jersey is blamed against overloading.

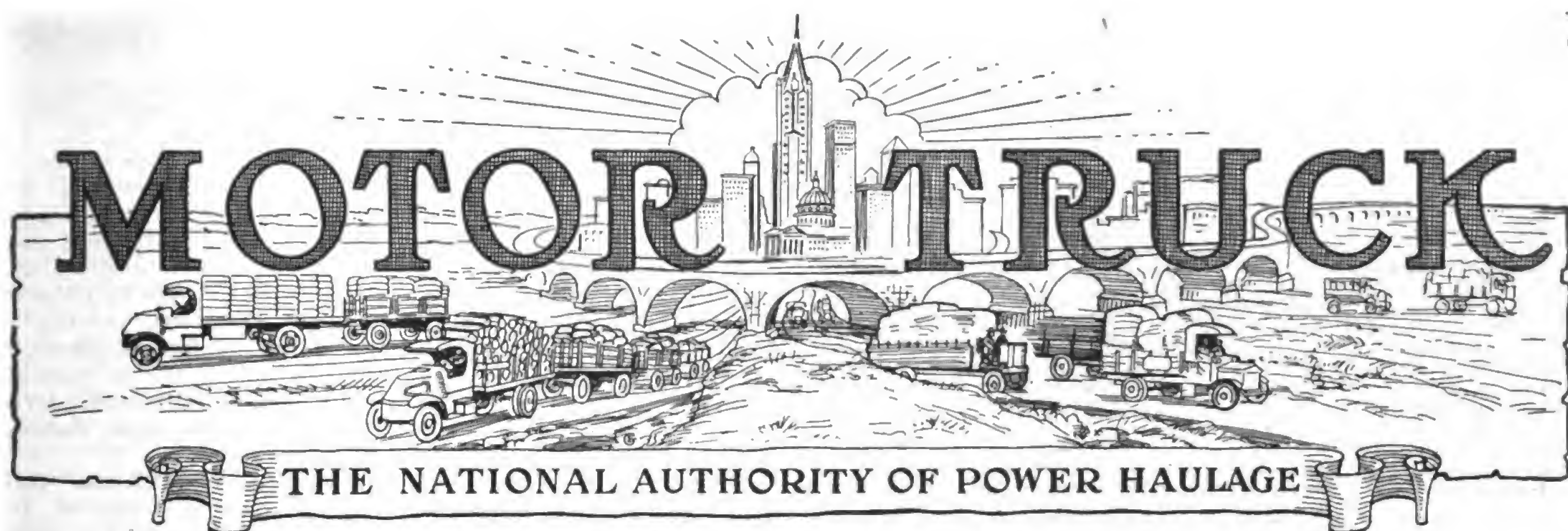
BOSTON BUYS FIRE TRUCKS.

In fear that there would be an advance of prices on June 1, Mayor Peters of Boston on May 28 approved the awarding of contracts to the American La France Fire Engine Co. for additional pieces of fire apparatus as follows:

One type 75 750-gallon combination pump and hose car, six cylinder, at \$11,555. One type 75 combination motor, hose and chemical car, six cylinder, at \$8290. Three type 75 six-cylinder motor high pressure cars at \$8440 each. These last cars will be used with the high pressure fire system.

TWO TRUCKS—40 MULES.

An instance where two motor trucks did the work formerly accomplished by 40 mules on a farm in the West was cited by A. H. Kroh of Chicago, motor truck expert and farmer, in an address to 150 members of the Buffalo, N. Y., Motor Truck Dealers' association, April 22, on the application of power machinery on the farms to increased production. He contended that farmers are the best truck prospects today and that dealers should sell the truck idea rather than a particular make of machine.



VOL. XI. NO. 7.

PAWTUCKET, R. I.

JULY, 1920.

WORK, NOT COST, BEST MEASURE OF TRUCK SERVICE

**Power Vehicles Regarded as, and Coordinated with, Mill
Equipment to Obtain the Greatest Plant Production—Big
Crew to Economize Time Large Factor in Plan of Operation.**

TRANSPORTATION economy may be measured by many standards. There are those who believe that the unfailing measure is terms of money, and this class represents the great majority of those who own or use highway vehicles.

There are others who believe that useful work is the better basis for determination, rather than cost, because haulage is an essential in industrial production.

In other words, transportation is recognized as a necessarily potent factor in industry, and this must be provided in whatever degree shall insure results, in precisely the same sense and in accordance with the policy that justifies investment in expensive machinery because its productivity is greater.

For the purpose of clearer presentation this article will deal with results of the general policy of the Hicks Manufacturing Co., formerly the Jenckes Spinning Co., one of the largest manufacturers of cotton fabric for power vehicle tires, as applied to use of automobile trucks.

This company is one of a group of in-

dustries operated by the same interests. The main plant is located at Pawtucket, R. I., and a very large mill is operated at Gastonville, N. C., while another mill is now being erected at Drummondville, Canada. The company recently absorbed the United States Cotton Co. at Central

expending \$1,000,000 for the new Drummondville plant, and \$1,000,000 additional will be required for equipment. The Gastonville mill has 70,000 spindles and the main mill at Pawtucket 85,000.

For a long time the Pawtucket plant has been operated continuously from 6:45 Monday mornings until 11 o'clock Saturday mornings, with regular intervals for meals for the workers and for changes of the day and night crews. The day crew works five full days and Saturday mornings, and the night crew five full nights beginning Monday.

The mill produces the highest grades of cotton duck and cord fabric used for tire manufacturing and at present prices for material and labor the products have an average value of approximately \$2.50 a pound. The cloth is made for all of the principal tire manufacturers of the

United States, including Goodrich, Goodyear, Firestone, Michelin, Miller, United States and other smaller concerns, and it is of different widths and weights. Annual Output Worth About \$100,000,000.

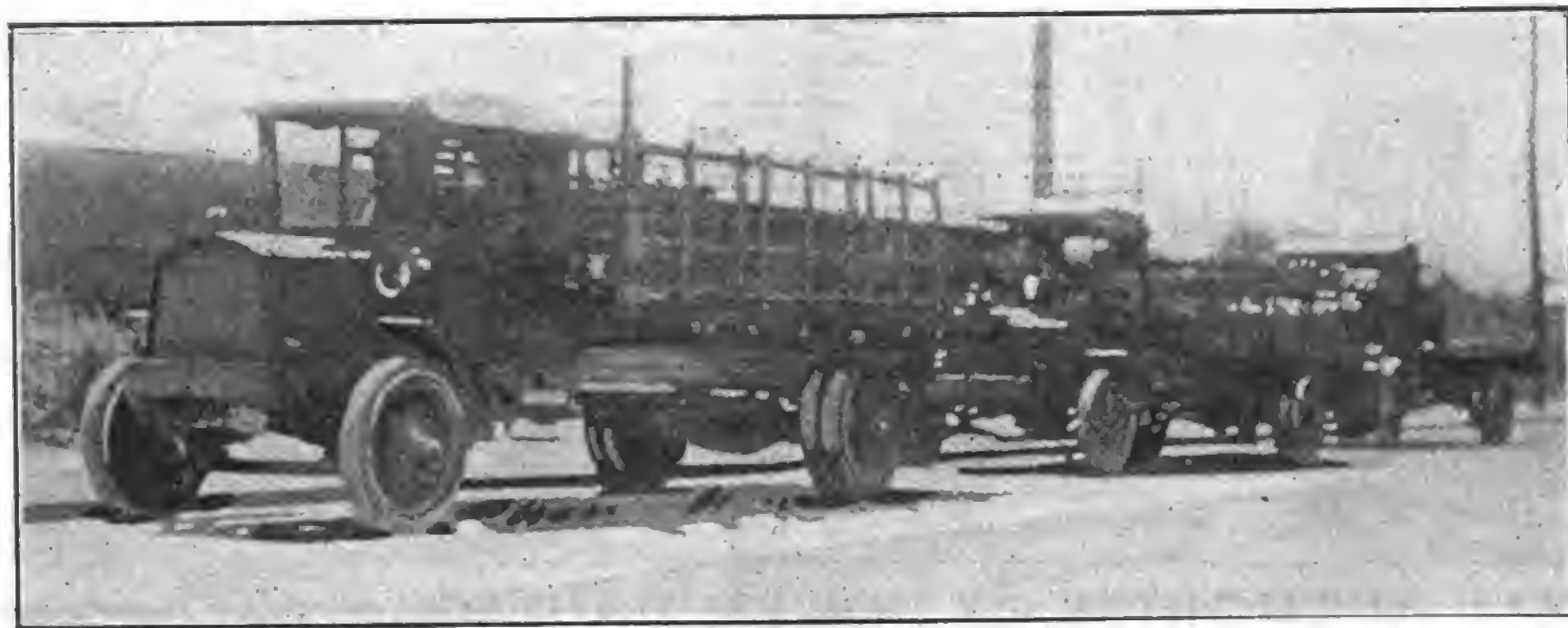
The Main mill at Pawtucket, which is specifically the subject of this article,



One of the Trucks of the Jenckes Spinning Co., Pawtucket, R. I., at the Cloth Storehouse of the Plant with a Six-Ton Load of Tire Fabric Worth \$30,000—This Haul Is but a Few Hundred Feet.

Falls, and a subsidiary is the Tamarack Co. at Pawtucket.

The company operates 350,000 spindles, and number of spindles is the recognized standard for expressing capacity in cotton manufacturing. Its authorized capital is \$20,000,000. The company is



Three of the Five-Ton Trucks of the Jenckes Spinning Co. in the Street Beside the Plant During the Lunch Hour, Ready for Immediate Assignment.

produces 75 tons of cloth each of the 24 hours of five days each week, or about 375 tons weekly, 1625 tons a month and 19,500 tons a year.

Expressed in terms of money the output of this mill alone is valued at \$375,000 daily, \$1,875,000 weekly, \$8,125,000 monthly and \$97,500,000 a year. The production of the other plants is not included in this total.

The company has been remarkably successful, maintaining a very high standard of quality and having such demand for its products that it has been constantly increasing its manufacturing facilities.

The main plant is what may be termed a weaving mill, the yarn being produced by its subsidiaries, the Tamarack Co. and the United States Cotton Co., but a very large part of the yarn is spun in mills in Fall River and New Bedford and delivered at the Pawtucket mill.

Yarn Hauled from Other Mills.

Obviously much depends upon the regular delivery of yarn, so that there shall be no cessation of supply. The Tamarack No. 2 and United States mills are comparatively short distances from the Jenckes mill, but the New Bedford and Fall River mills are approximately 36 and 22 miles distant.

The yarn is usually delivered by the New Bedford and Fall River manufacturers, trucking contractors hauling this over the road, but the Jenckes company hauls the yarn produced in its own mills.

As the main mill is located beside the yard of the, New Haven railroad, and there is a spur track from the yard to the cloth store room, the haulage needs of the company are surprisingly small compared with the volume of its output.

No plant could be more advantageously located, for even with spur tracks to all of its mills it would be dependent upon switching to obtain its cars, and here it has the resources of one of the largest freight yards between New York and Boston.

Practically all of the raw material for manufacture, including cotton, must be taken from cars in the freight yard and hauled to the mill store houses, and this applies to the No. 2 mill of the Tamarack Co.

The yarn from the Tamarack No. 2 and the United States Cotton mills, and from the mills at Fall River and New Bedford is usually in cases or on "beams," the latter very large spool-like rolls. In either form the units are com-

paratively few to a load and are correspondingly heavy, but they can be handled easily by the average truck crew.

The yarn from the outside mills is delivered at the company's mills by the trucks of contractors, and the unloading is done by the yard gang, and while it is under the supervision of the garage manager this does not have bearing on the use of the company's equipment, other than the platforms must be kept as free as possible that there shall be no waiting of machines as they arrive with freights. There is always a sufficient number of men available to meet any emergency, however, and rarely is a truck kept waiting.

Product Shipped from Plant Daily.

All of the cloth produced in the mill is taken from the cloth room and hauled to the cloth storehouse, from which it is shipped. All of the fabric produced is shipped by railroad, and each night the product is loaded into cars switched to the cloth storehouse, so that there is seldom more than one day's production awaiting shipment.

The longest haul to the cloth storehouse is not in excess of 1500 feet, and as production is known transfer from the cloth rooms is systematically done. The fabric is sent out in readiness for shipping and in the form of rolls, each covered with paper and wrapped in burlap, each roll numbered with the gross and net weight and tare stencilled upon it. The rolls weigh from 250 to 1700 pounds approximately, and they must be handled

with extreme care to insure against damage.

The duck can endure any degree of rolling and may be placed on end, but the cord fabric is extremely delicate, for should a cross thread be broken a part of the material would be valueless and a loss, on which a rebate could be claimed. For this reason the rolls, varying in length from 36 to 90 inches, must be moved carefully and so far as possible with the entire length supported. Even treading on a roll might cause damage from thread rupture.

All loads are carried with the rolls placed crosswise on the decks of the trucks and generally the rolls are rolled on and off with skids, from three to six men doing the work. There is but one entrance to the cloth storehouse into which the trucks are backed so the loads shall be fully protected against wetting.

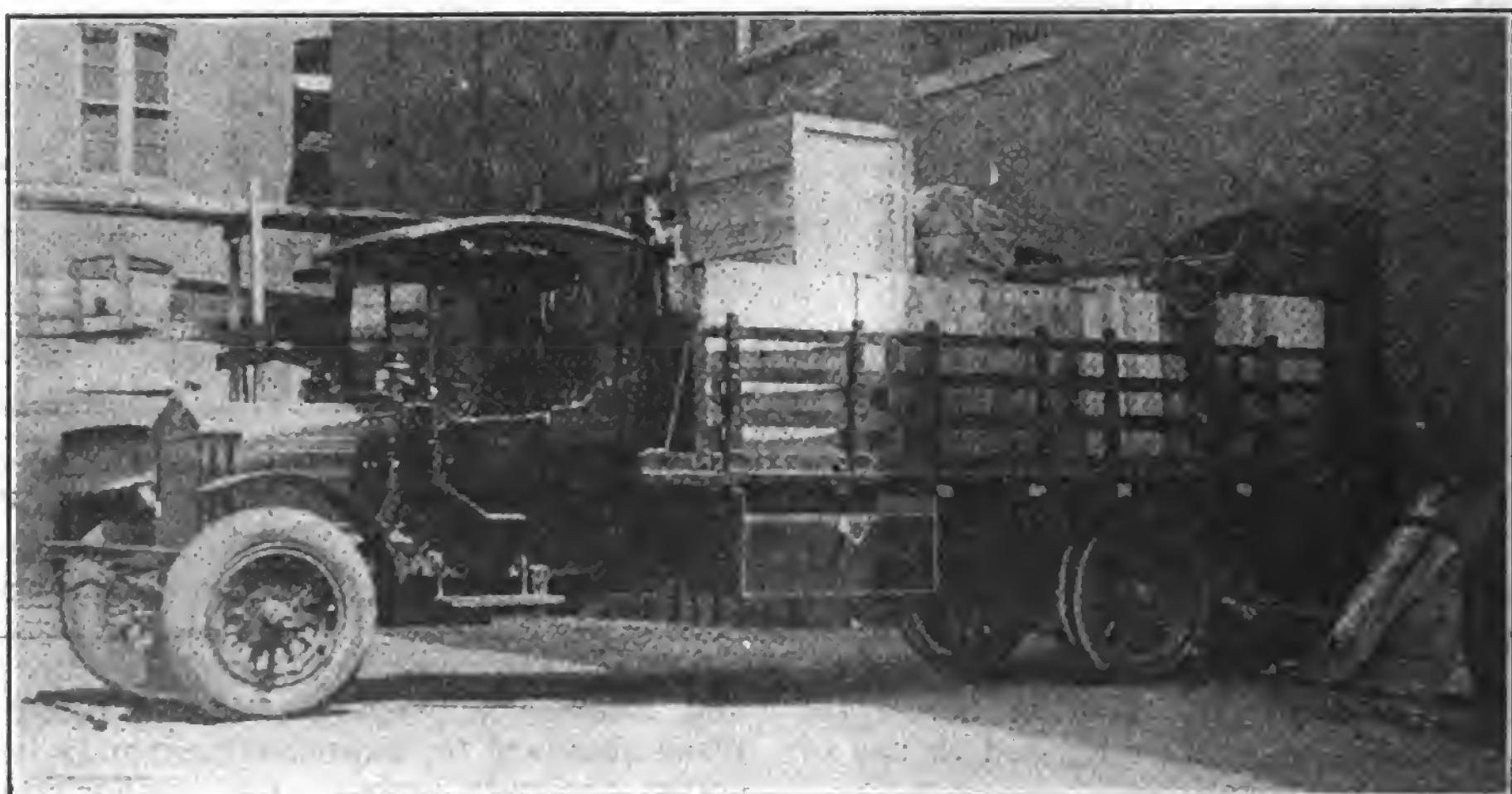
Ordinarily one truck can transfer the cloth, and with gangs of men at either end of the haul very little time of the machine is required at the loading platforms.

Fleet of Trucks and Cars.

The magnitude of the operations are such that the company has need of a very fair fleet of machines and its equipment includes two five-ton Pierce-Arrow, one five-ton Packard, one four-ton Packard, one 5½-ton Mack trucks, one Reo speedwagon of 1500 pounds capacity, one Ford delivery wagon and four small passenger cars that are used for errands.

The company's garage is in connection with the mill plant, and this is a single structure reached by a drive from Weeden street. The main entrance is wide enough for two trucks to pass through and the floor is unobstructed. At the rear of the garage is a wide door through which freights can be discharged directly from the trucks into a store room, so that delivery can be made under cover and where the men can work quickly.

The manager of the garage is also the yard superintendent and he has under his direction approximately 100 men. He is expected to provide the men and the rigging for the moving of machinery and similar changes made in equipment. His men load and unload all the trucks. This includes the haulage from the freight yards to the mills, from different local



A Five-Ton Pierce-Arrow Truck with a Freight of Yarn in Cases at the Receiving Room Door at the Main Mill, Ready for Unloading.

sources of material supply to the mills, between the mills, from the cloth room to the cloth storehouse, and, since the railroads cannot be depended upon for transport, frequent special long distance trips are made with machinery or machine parts on which repair is necessary.

All work is ordered by requisition made by department heads upon the garage superintendent aside from the regular assignments, such as cloth transfer, so there is no possibility of confusion or loss of time, and the assignment of the equipment is discretionary with the superintendent. Should he need a greater number of units these are obtained upon order with a single contractor who supplies the trucks in capacities to meet the particular work. This obviates the necessity of "finding" trucks when occasion demands and insures adequate equipment.

The company has had at times, especially last winter when it was moving much heavy machinery, as many as a dozen hired trucks in service, but normally two or three will be the maximum number in excess of its own. But aside from the company's trucks at least as many more directly serve the mill, including those hauling for the yarn manufacturers and delivering fuel oil.

Long Distance Emergency Hauls.

Frequently these trucks have to do hard emergency work. As illustration, a part of a rotary converter that weighed upwards of four tons was rushed over the road to the plant of the General Electric Co., at Schenectady, N. Y., where a special repair gang made restoration in a few hours, and the truck was driven to maximum speed returning. The start was not made until the mill had closed for the week-end and the truck was back with its load so that there was but a few hours' delay starting the next week. Had it not been possible to send the part to the factory the loss of time of the mill would have been days and the cost would have been represented by greatly decreased production during that period.

The manner of dealing with this repair is fairly representative of the policy of the company. The trucks are regarded as necessary mill equipment and they are worked in whatever manner may best serve the needs of the company with reference to maintenance of mill production. The actual expense of the work as compared with other forms of transportation is not the basic factor. The cost, for instance, might show an extremely large item directly chargeable to a specific haulage work, but if this were weighed against the continuity of production, which might not have been possible were the work done for less expense, it would be amply justified, and, in fact, be a very large economy.

During the world war the company operated to full capacity, producing duck and canvas used by the government for army and navy use, and following the completion of contracts the company determined to devote its facilities to tire fabric. This necessitated numerous changes of machinery and because this could not be obtained quickly in the market the machines in a mill at Lawrence,

Mass., was bought and this was transported by truck because delivery could not be obtained by railroad with any degree of certainty, and at best only after long delay.

Big Crews Economize Truck Time.

The system of operation is to keep the trucks moving all of the time that is practically possible. The regular work is generally short hauls, and each of the large trucks is manned by a driver and helper, but wherever the loading or unloading, because of the character of the freight or the conditions, would require considerable time if done by the truck crews, a gang of yard men, from two to six, is sent with each machine. This means that instead of a truck standing a half hour, for instance, it is unloaded in five minutes. One cannot well estimate the ratio of time economy, but this will state the policy and the result.

The time of the truck is valuable. There is no desire to overwork the men, but the productivity of the machines is in keeping them moving, and loading and unloading with the greatest practical ra-

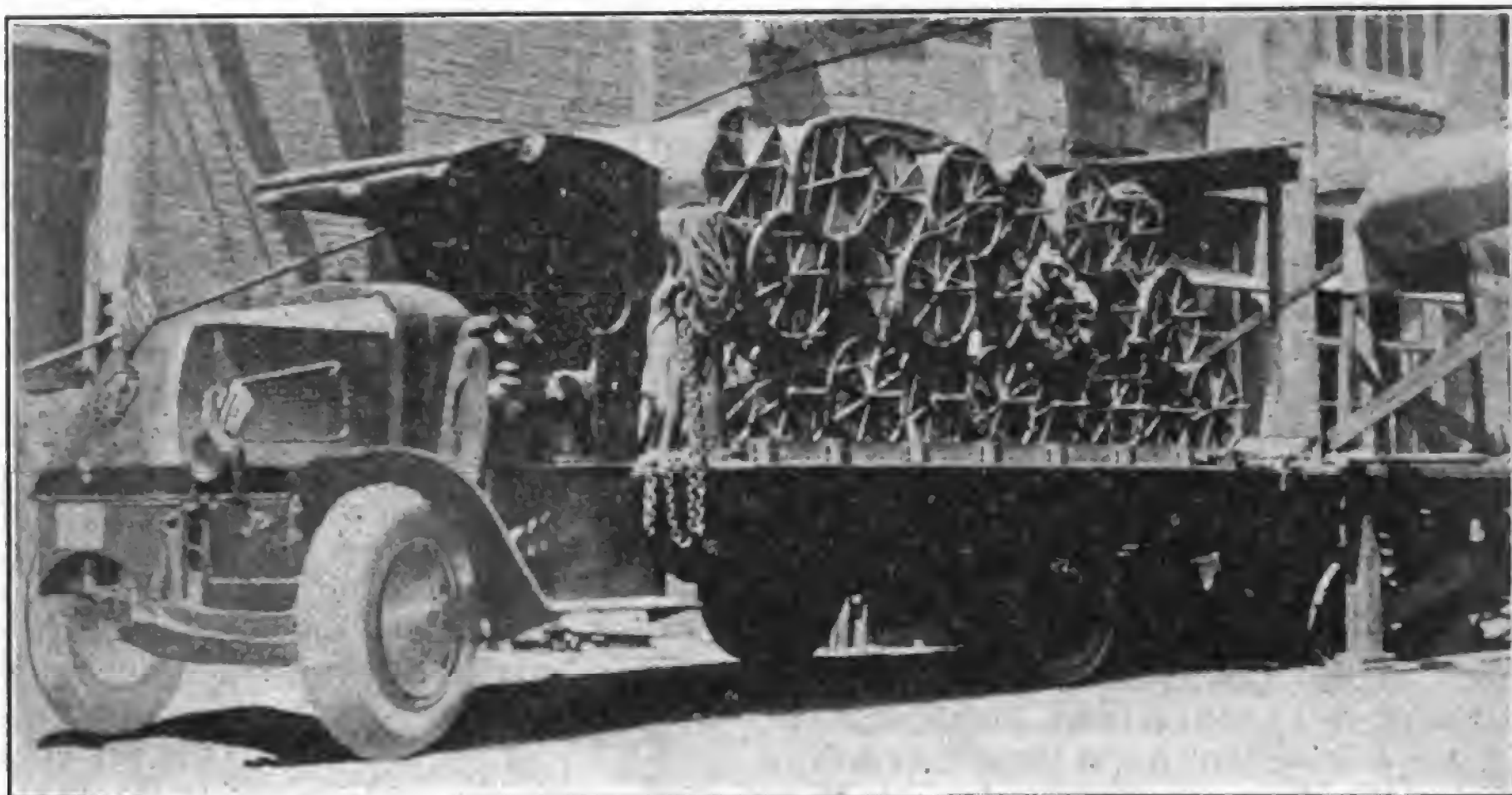
and repairs made as required, but much of the work on them is done nights when the machines are off the road. The company has had long experience with trucks and has used several makes, but decision has not as yet been made at standardization.

All of the trucks are equipped with pneumatic tires forward, and these have been found satisfactory after an experience of upwards of two years. Solid tires are on all rear wheels, however. The two light machines have been in use for practically a year and the Reo is driven from 60 to 100 miles a day, sometimes exceeding the maximum stated.

The cost of the trucks is very carefully kept and while it may appear that it necessarily exceeds those of other concerns yet, when the work value is computed from the viewpoint of the company they are as valuable equipment as it owns.

WHITE SELLS GARAGES.

The White Co., Cleveland, has sold its



A 5½-Ton Mack Truck Loaded with "Beams" of Yarn Spun at Fall River and Hauled Overland and Delivered at the Mill Platform; Saves Packing and Handling.

pidity. The drivers are carefully picked men. They are extremely well paid and they understand that their energy and loyalty is recognized. They are paid for all overtime work. If, to illustrate, a crew that reaches the mill at 12:25 is entitled to an hour for lunch, but the men report promptly at 1 and are given an hour overtime, this insuring the use of the truck, and fully compensating the crew.

Truck Crews Do the Work.

The trucks are worked hard and fast, but the spirit of the drivers makes this possible. A work is rushed, but the transportation superintendent maintains that one of his crews will do twice as much in a single day as will be done by a hired truck, and that if an order is given it is implicitly obeyed. If a driver is sent out he will go anywhere without a criticism and can be depended upon to give his best.

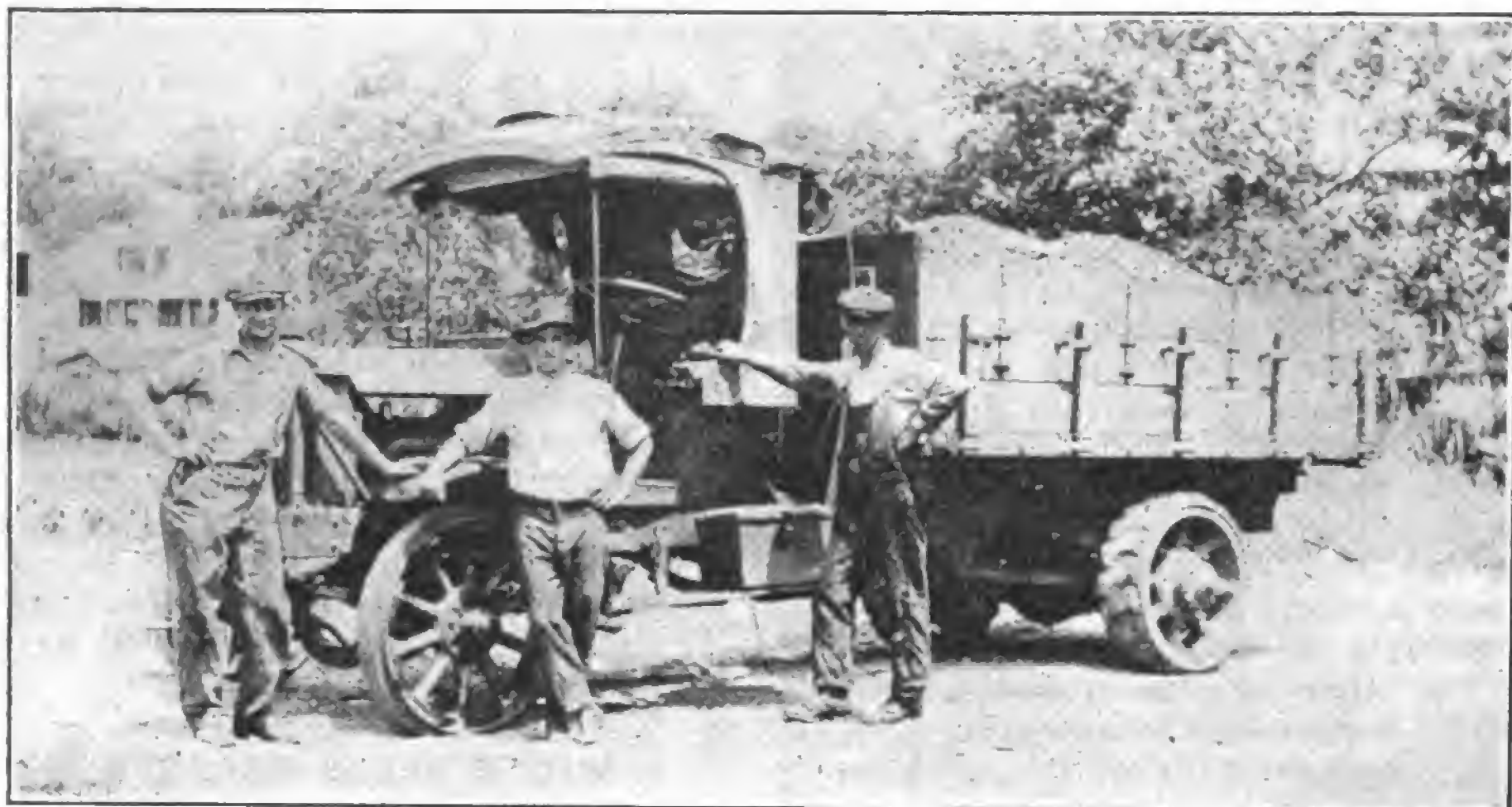
The trucks are very carefully maintained. No special shop is necessary, for the resources of the plant shops are always available, day or night. The trucks are frequently inspected and adjustments

holdings on West End avenue, between 69th and 70th street, New York. The property consists of three garages, one six stories and the other three stories high. They occupy a plot 100 by 100 feet. Something like a quarter of a million dollars is involved in the deal. The White company has its New York headquarters at 631 West 57th street.

GOODYEAR BUYS ANOTHER TOWN FOR COTTON RAISING.

The Southwest Cotton Co., a subsidiary of the Goodyear Tire & Rubber Co., has just purchased the town of Marinette, Ariz., and 7800 acres of adjoining land, for cotton growing, increasing its holdings for the raising of long staple cotton for automobile tire fabric to 36,000 acres. More than 20,000 acres has also been leased. Of the 56,000 controlled about 30,000 acres are under cultivation. Another Goodyear subsidiary has gone into the Imperial Valley of California and arranged to take large portions of the cotton yield in that fertile region.

TRUCK FLEET FEEDS CONSTANT FUEL SUPPLY TO FOUR MILLS



A 3½-Ton Federal Truck, One of the Fleet of Five Operated by L. S. Gervais of Lippitt, R. I., to Haul Coal from 10 to 14 Miles to a Group of Mills.

A FLEET of Federal trucks in the service of L. S. Gervais, Lippitt, in the town of West Warwick, feeds fuel to four mills in the Pawtuxet Valley of Rhode Island, keeping these factories humming day in and day out throughout the year. The trucks are always on the job and the mills are always running.

The coal is hauled from Providence, which is 10 miles away from the nearest plant and 14 miles from the most distant mill. Four of the five big Federals haul 80 tons in one day from Providence.

This includes for an ordinary day 30 tons to the Crompton company mill at Crompton, 10 miles from Providence, 20 to the Hope company at Phenix, 12 miles; 10 to the Pawtuxet Valley Dyeing Co.'s plant at Harris, about 12 miles, and 20 to the Hope company at Hope, 14 miles.

Four of these Federals, one a five-tonner and the others of 3½ tons capacity, have dump bodies with power hoists. These are all used in hauling coal. For an average day, from 6:45 a. m. to 5:15 p. m., four round trips are made between Providence and Crompton, Harris and Phenix and three between Providence and Hope. The trucks travel 80, 84 and 96 miles, according to which plant the hauling is done.

The fifth truck, a 3½-tonner, has a long van body and is also employed mainly in mill work. This vehicle averages one trip a day from the Hope and Phenix mills to the Lonsdale bleachery at Lonsdale, R. I., carrying five tons or more of cotton cloth on each trip to be dyed and bleached. The distance both ways is 40 miles and quite often two trips are made in a day, which permits the use of the truck for other purposes the following day.

This truck is also employed on trips to Boston for the various mill concerns for which Mr. Gervais hauls, carrying machinery and materials either way. Because of the product carried the four trucks with dump bodies carry no load on outgoing trips to Providence. The other

truck seldom has a return load from Lonsdale.

When there is a lull in coal hauling Mr. Gervais always finds other work for his dump trucks to do. Right now his five-tonner and a 3½-ton truck are engaged in road work at Kent. Normally the Rhode Island truck man is not in the market for hauling other than that required by the four mills he serves. Occasionally when a new official comes to or leaves these concerns he transports his furniture to or from the Pawtuxet Valley. On Sundays he quite often takes parties on trips to the shore resorts or other points in his van truck during the summer season.

Mr. Gervais has only one driver on each truck, all loading and unloading being done by the mills for which he hauls. He has no contracts with any of these companies but renders bills at regular intervals, charging for coal haulage by the ton and cloth haulage by the hundredweight. He carries fire insurance for

his coal loads and is insured against theft when a cargo of cloth of unusual value is carried.

The Pawtuxet Valley truckman is a believer in cost figures and kept them faithfully up to a recent fire when all his records were destroyed. He is soon to reestablish his cost system. Right now his bills for gasoline and oil approach the \$1000 mark each month, last month's figure being \$880.

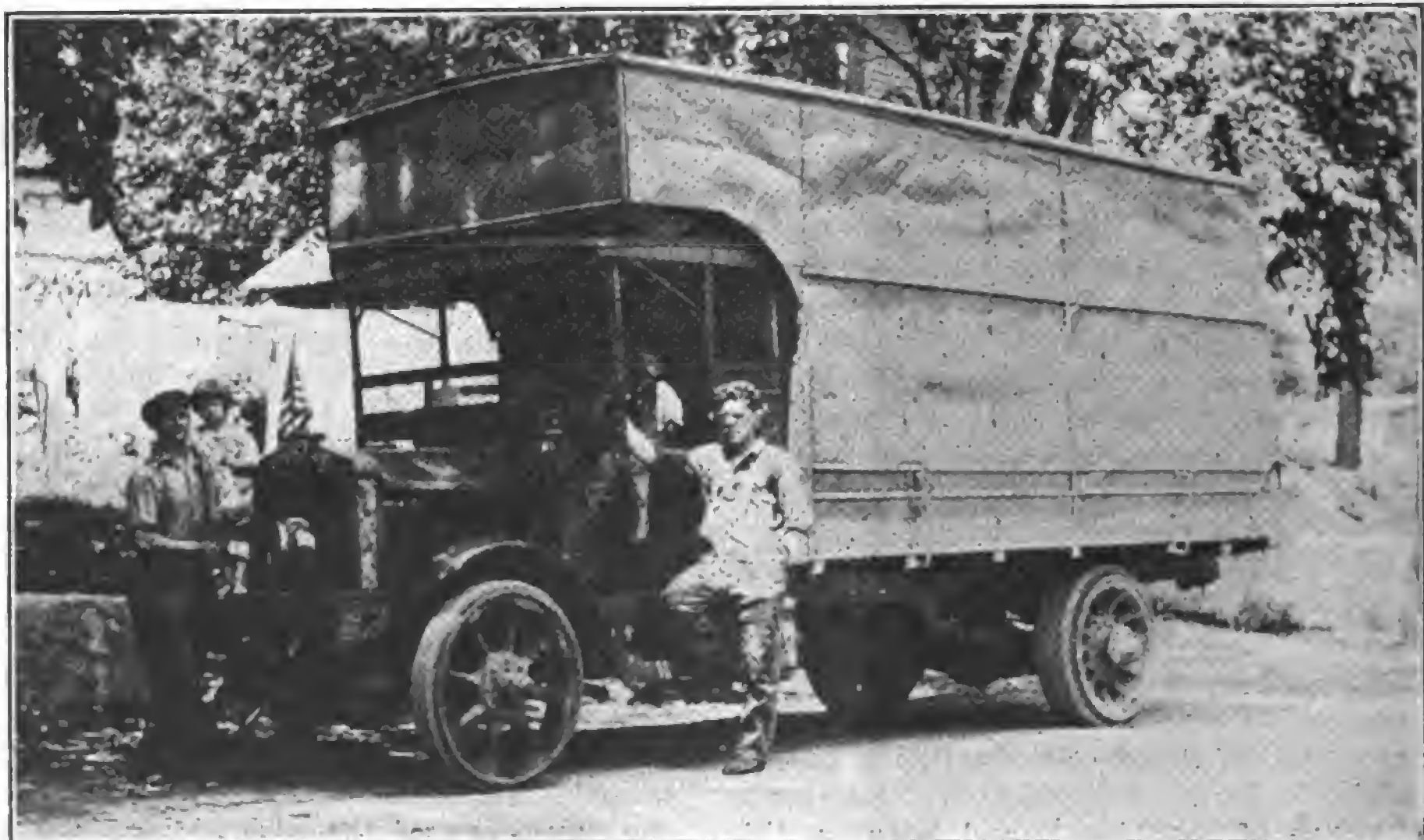
In addition to his five Federals Mr. Gervais has a Brown truck, also a Mais. The latter is seldom used, its towing duty job being practically outlawed. The Brown one-ton truck does any light jobs that may be required. Mr. Gervais got his first Federal two years ago and his last two weeks ago.

85 TRUCK SCHOOL GRADUATES.

Instruction schools of truck drivers conducted by the Packard Motor Car Co. closed the latter part of June in Minneapolis, St. Paul and Duluth after a course of eight weeks. There were 40 graduates at St. Paul, 25 at Minneapolis and 20 at Duluth. These schools will be carried on in the fall on a more extensive scale, to include laboratories and full working models. The schools, which are not confined to Packard drivers, are made attractive by smokers, moving pictures, community signs, lectures and other features.

SERVICE FOR NASH QUADS.

The Philadelphia Nash Motor Co. is planning an extensive sales and service campaign for Nash Quads. A new service station, with over 10,000 square feet of floor space, has been opened at 1648 North Park avenue. Passenger car service will be given, although the station has been especially equipped to care for trucks.



A 3½-Ton Federal Truck with Special Van Body, Equipped for Trucking Unfinished Fabrics from the Mills at Hope and Phenix to the Lonsdale Co.'s Bleachery at Lonsdale, R. I.

TRUCK CREW MAKES COAST-TO-COAST DRIVE WITHIN FOURTEEN DAYS



The Crew of the Packard Truck That Drove from Los Angeles to New York in 13 Days, 13 Hours and 15 Minutes.

WHAT was the fastest time ever made by a truck driven from one side of the American continent to the other was set down when a three-ton Packard truck, owned by the Goodyear Tire & Rubber Co., rolled into New York city the night of June 20 at 11:15.

As the machine had left Los Angeles, Cal., at 10 o'clock the morning of June 7 the total elapsed time for the 3451 miles traversed was 13 days, 13 hours and 15 minutes, or 325 hours and 15 minutes. The best time ever made previously in a transcontinental drive in a truck was 411 hours, so that the Packard machine covered the distance 85 hours and 45 minutes faster, or three days, 13 hours and 45 minutes when measured by sun cycles.

While this does not approach the speed made by passenger cars in coast-to-coast drives, it was far faster than was believed possible for cars for years, and it is a mark that will probably be "shot at" for a considerable period.

Several very important facts were demonstrated to the truck industry in this drive, but if there is any single factor that commands attention from power vehicle owners it is the seemingly long life, when expressed in miles, of trucks equipped with pneumatic tires.

Demonstration of Truck Service Life.

And here emphasis may be made that manufacturers when estimating service life have generally fallen far short of what may be realized with pneumatic tires and what may be regarded as practical maintenance. Allowance should be made, of course, for the fact that the estimates have been based on solid tire equipment, and usually applied to units of large capacity.

Generally speaking and with reference to trucks of from 3½ to five tons capacity with solid tires, claim is made that owners should depreciate them on the basis of five years of service life, but preferably on 100,000 miles driving, and experi-

ence has proven that with well designed and built machines either of these is extremely low. Yet, considering well high universal custom of heavily overloading, hard driving and mechanical neglect, either factor may be accepted as safe for owners' estimates.

The men who know trucks will admit that speed and driving stresses have very large bearing truck service, and much greater wear and deterioration must result from fast and long drives. The record making Packard

truck is not old in months of use, being delivered in June, 1918, but in two years it had been driven 120,000 miles, and seemingly it is in admirable mechanical condition, for the record was made with the last 3500 miles of use. As this truck has been driven at very high average speed the minimum wear must be attributed to the tire equipment. For a better understanding of the use of the truck the following expressions in miles are interesting:

	Miles
Total driven (approximately)....	120,000
Annual mileage (approximately)....	60,000
Monthly mileage.....	5,000
Weekly mileage.....	1,156
Daily mileage.....	165

The monthly, weekly and daily averages are based upon continuous use, seven days a week, without considering Sundays, holidays or short days, so that it is evident these are extremely low.

Were the days the truck was not in use known and allowance made for them, the weekly and daily mileages would no doubt be considerably increased.

Elapsed and Actual Driving Time.

With regard to the drive: The distance, 3451 miles, was made in 325 hours and 15 minutes, which was, without allowance for lost time, at the rate of five minutes and 40 seconds for each mile, and an average for the total elapsed time of 10.59 miles an hour. This would appear to be very slow, but as a matter of fact it is a very high average for so long a distance.

The actual moving or driving time of the truck was 204 hours and 55 minutes, or an average of three minutes and 24 seconds for each mile, with an average speed of 15.25 miles an hour.

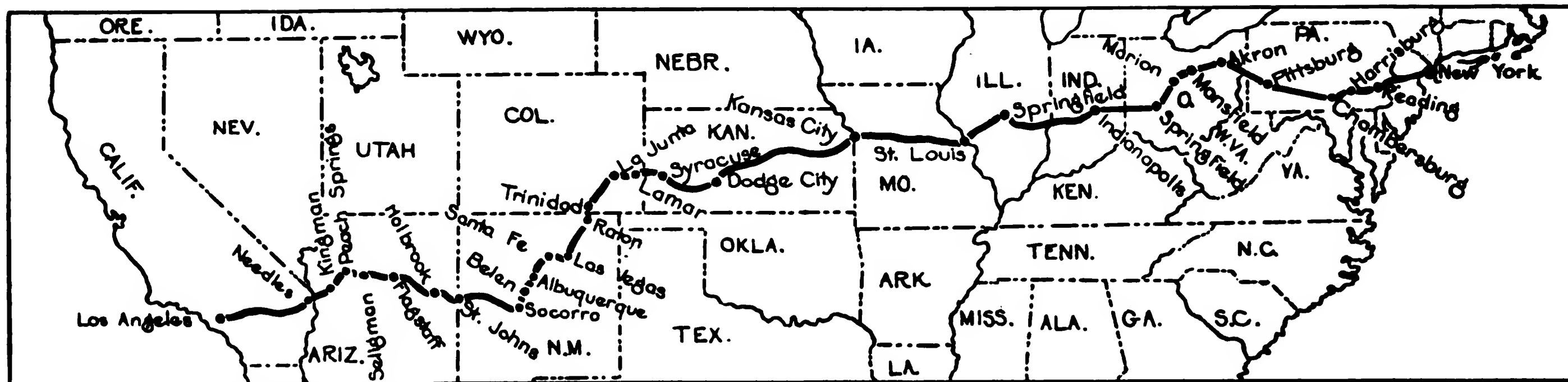
Driving on city streets and on smooth surfaced roads this average speed may not impress one, but for the greater part of the way the highways are not what can be classed as good, and for much of the distance from poor to extremely bad, on which fast driving was practically impossible.

During the total period of 325 hours and 15 minutes 120 hours and 20 minutes were taken up with filling the fuel, oil and water tanks, making adjustments, making inquiries, finding detours, meals, delays from various causes, the actual time lost an hour of total elapsed time being approximately 22 minutes and 40 seconds, despite the fact that the crew of two men drove alternately for periods of varying length.

One can assume with every practical reason for such conclusion that the men wasted no time and drove hard the entire distance. When the drivers, Howard Scholder and Herbert Temple, left Los Angeles they decided that the best working plan to "highball" was working eight-hour shifts. They tried this and reduced the turns to six hours and later again reduced them to four, which was continued.



The Truck That Was Driven for the Coast-to-Coast Record, That Has Been Driven More Than 120,000 Miles in Two Years, Showing the Size of the Tires That Made Passenger Car Time Practical.



The Route of the Record-Making Coast-to-Coast Drive from Los Angeles to New York City, Showing Some of the Cities and Towns—A Practical but Not Generally Traversed Highway That Is Most Direct for Transcontinental Tourists

The truck was originally equipped for use in the Akron-Boston overland express service of the company and has a very large express body with a standing top and side curtains, and a well enclosed cab with a comfortable sleeping berth in the compartment behind the cab. Because of the speed sleep in this was far from affording the rest obtainable in a bed and for this reason sleeping was found more practical between short watches, adopting the plan followed by the crews of vessels at sea. The work was far easier, however, than would have been experienced in a short but faster drive with an uncomfortable passenger car.

Delays from Unusual Causes.

Some of the delays were from unusual causes. For instance, at Seligman, Ariz., the truck because of the height of the body, could not be driven under a bridge on which the Santa Fe railroad crossed the only highway that could be traversed. For approximately four hours the truck was held up while the drivers dug two trenches in the hardpan surface of the road, each about 30 feet long and one foot deep, under the bridge, and in these the truck was driven beneath the track. Then the drivers restored the road so far as possible and hustled onward.

At Albuquerque, N. M., water in the Rio Grande river was exceedingly high and to keep on, instead of waiting for recession of the flood that covered long stretches of highway, numerous detours were made. While crossing a large irrigation ditch the truck crashed through the deck and much hard labor was necessary to extricate it. At this locality 32 hours was required to travel 34 miles, or

about a mile an hour. This loss reduced the average speed greatly.

The General Equipment Carried.

Mechanically the truck needed but little attention and no tire changes were made. The truck was equipped with 38 by seven-inch tires forward and 44 by 10-inch tires on the rear wheels. An extra set of tires was carried, with 150 gallons of gasoline, 30 gallons of oil, chains, plank, axes, shovels and other paraphernalia that was found extremely useful at times.

The destination for the truck originally determined was Akron, but on reaching Akron the time made was so surprising that the machine was dispatched to New York City. From Akron Carl H. Stubb accompanied the crew. The route is indicated on the accompanying map and crossed 10 states and entered the extreme southeastern part of New York.

The Principal Places Passed Through.

The following is the itinerary by days:

June 7, left Los Angeles, 10 a. m., passing through San Bernardino, Bartow and Ludlow, Cal.

June 8, Needles, Cal.; Kingman and Peach Spring, Ariz.

June 9, Seligman, Ashford, Flagstaff and Indian Reservation, Ariz.

June 10, Winslow and St. Johns, Ariz.; Datil, Magdalena and Socorro, N. M.

June 11, Belen and Albuquerque, N. M.

June 12, between Santa Fe and Albuquerque, overhauling magneto.

June 13, Santa Fe, Las Vegas, Wagon Mound and Raton, N. M.

June 14, Trinidad and La Junta, Col., and Syracuse, Kan.

June 15, Marion, Dodge City, Great Bend and Olathe City, Kan.

June 16, Bocnville Ferry and Kansas City, Kan.

June 17, Collinsville and St. Louis, Mo., and Springfield, Ill.

June 18, Indianapolis and Richmond, Ind., and Springfield and Marion, O.

June 19, Mansfield and Akron, O.; Darlington, Pittsburgh, Greensburg and Bedford, Pa.

June 20, McConnellsburg, Chambersburg, Harrisburg, Reading and Easton, Pa., and New York City.

Truck Has Large Power Plant.

The truck has the same type engine installed in all Packard trucks of five-ton load rating, but the remainder of the chassis is that of machines built for three-ton loads when driven with solid tires, the large engine insuring the greater speed with a full load. It was designed to demonstrate the economic value of pneumatic tires. When first used for express service between Akron and Boston it was frequently driven the round trip of 1500 miles in 5½ days, carrying products East and tire fabric West. In 1918 and 1919 it was diverted from this service to carry expeditions of Boy Scouts through some eastern states.

Between Sept. 7 and Nov. 17, 1918, it was driven 7763 miles across the continent and back, carrying a consignment of airplane tires west. In July, 1919, it accompanied a Motor Transport Corps convoy from Washington to San Francisco, and later was sent to different parts of the country for demonstration service. This accounts for the extremely large mileage made during two years, for often the total for a week has exceeded the monthly total of trucks in average haulage work.

BARS AMERICAN TRUCKS FROM ENEMY COUNTRIES.

Automotive products are regarded as material of war and were not included when resumption of trade relations with enemy countries were resumed July 8. The ban is on the shipment of automobiles and trucks or their component parts to Germany, Russia, Hungary, Austria, Turkey and Bulgaria.

SELDENS IN CITY SERVICE.

The city of Woonsocket, R. I., has purchased two Selden 1½-ton trucks for use in hauling away ashes and other refuse, except garbage. The trucks travel in pairs, visiting each of the five wards of the city on succeeding days of the week up to Saturday.

New Hampshire Distributes World War Certificates by Motor Truck

The State of New Hampshire found after investigation that motor trucks would furnish the most economical method of distributing the certificates awarded to men who served in the world war. The cost of mailing would have been over \$5000. By the use of trucks this proposed outlay will be cut in two.

TO BUILD BIG TRUCK WHEELS.

The American Steel Foundries Co., Chicago, will add a cast steel wheel for heavier trucks to its present line of disc steel wheels for cars and light trucks.

MAY TRUCK EXPORTS.

In May 1221 truck chassis and valued at \$1,807,909, and 1435 fully equipped trucks valued at \$2,353,802 were shipped abroad. England got 690 of these, Canada 316 and Cuba 235. Brazil was next in line with 170. Spain got 101 and Mexico 97. The next four leading importers of American trucks were: British India, 85; Japan, 81; Norway, 78; Philippines, 73.

DRIVE-AWAYS BY WHOLESALE.

Truck and car manufacturers are relying on drive-aways to such an extent that it is estimated that from 12,000 to 14,000 men are now engaged in this work throughout the country.

TRUCKS TRIPLE OPERATING AREA OF BIG RENDERING CONCERN

WHAT motorization has done for the Consolidated Rendering Co. of Boston, a flourishing organization, with plants in Worcester, Syracuse, Pawtucket, R. I., and 17 other cities, and sub-branches in scores of cities and towns, is strikingly exemplified by the three-fold expansion of the zone of operations of the Pawtucket subsidiary, the L. B. Darling Fertilizer Co., during the four-year era in which trucks have been used for haulage.

Neither the Pawtucket territory nor the 20 other districts which the concern serves is completely motorized. Some of them are near the half way mark and others are beyond that line. Officials of the company who have knowledge of operating conditions and methods realize that the many horses still used by the institution will be replaced by power trucks for collecting and delivering merchandise.

Four years ago the Pawtucket plant used 55 horses, about 35 wagons and no trucks. Today it has 30 horses on the job, 18 wagons, nine trucks, ranging from the three-quarter-ton size to one five-tonner, and two runabouts. Tomorrow—but that is another story.

No definite statement as to complete motorization of this concern could be secured. From the meager information gleaned along this line, coupled with the knowledge of results already scored through the use of power vehicles, it may be safely surmised that the tight money market of today is one of the chief reasons why the hauling department of this organization is not completely equipped with engine-propelled apparatus.

Trucks and other causes have so broadened this business that the big capital necessary to motorize the 20 plants is apparently being turned into development channels. This means that when motorization does take place it must be on a large scale. For instance, a half score of trucks of medium size might be necessary to displace the 30 horses now in service at Pawtucket. If similar conditions prevail at the other 20 plants, which is likely, this would mean 200 more trucks to end all the company's haulage problems through an adequate trucking service.

Tripled Business Zone.

The Pawtucket plant has reached out in the four years that trucks have been employed beyond its former eight-mile area to a territory radiating a distance of 25 miles from the Rhode Island headquarters. Some of this extra territory was formerly covered in a hap-hazard way through sub-branches. All these have now been eliminated except three, the latter being located at Providence and Woonsocket, R. I., and Mystic, Conn. From the latter office a Reo collects in Groton and Stonington, Conn., and Westerly, R. I.

The collections made by the concern comprise market scrap, such as tallow trimmings and bones. These are ren-

dered at the Pawtucket factory into several grades of tallow and grease for soap makers. The suet is made into oleo oil and stearine under Federal inspection. The latter ingredients are used in the manufacture of compound lard, oleomargarine and some grades of butter. The concern's products go to all points of the compass. The scrap is put into barrels for truck haulage.

The accompanying picture of a five-ton White truck shows part of a load of 25 barrels of oleo oil, half a shipment to Smyrna, a Grecian possession in Asia. This oil is to be turned into edible purposes, being used in the making of both shortening and butter.

One Truck Vs. Six Horses.

The chopping off of its latest branch, one in the Pawtuxet Valley, is typical of the manner in which others were eliminated and the saving in time and money to the company by the change-over. When the company maintained a branch in the valley six horses and two wagons

stops the machine has been equipped, like all the company's trucks of that size, with pneumatic tires on the rear wheels, in addition to the standard pneumatics in front. The concern has standardized on U. S. Nobby Cords.

No Local Railroad Hauls.

What has happened in the Pawtuxet Valley has also been duplicated at many other points. Sometimes, as in the case of Woonsocket, the branch office is still doing business despite the advent of the truck. In olden days the products collected around Woonsocket were shipped by railroad freight from that city. In many instances the company would have saved time by rolling the barrels over the highway by hand, there having been cases—and not isolated ones—when it has taken a few barrels 10 days to travel the 12 miles to Pawtucket by railroad freight service.

The company now has in service a five-ton White, a two-ton Republic, three 1½-ton Autocars, three ¾-ton Reos and a



Discharging 25 Barrels of Oleo Oil, Each Weighing About 485 Pounds, from a Five-Ton White Truck at the Pier of the Blackstone Valley Transportation Co., Pawtucket, R. I., Half of a Shipment to Smyrna, Turkey, in Asia.

were used to do the work which one medium sized truck and one man now does more speedily, more economically and more efficiently.

Two two-horse wagons were formerly used in Pawtuxet Valley collections. An extra pair of horses was maintained for relief purposes. One wagon collected the market refuse and jogged half of the 20 miles to the Pawtucket plant, where it was met by the other wagon and the horses changed for the rest of the haul. The man who did the driving on the Valley end also had charge of the office, which branch was closed while he was on the road. This explains why the truck only displaced two men. One saving, of course, was office rent.

Today a 1½-ton Autocar truck represents the interests of the firm in the Pawtuxet Valley fully and completely. This truck makes the trip every day. While it is gone the vehicle travels 45 miles and makes a half hundred or more stops. It leaves Pawtucket at 7:30 a. m. and is back before 5 p. m. That it may hit up speed when necessary between

Ford delivery truck. The Republic goes over into Massachusetts daily, covering the towns of Attleboro, North Attleboro and Franklin. One Autocar makes the Pawtuxet Valley trip, one goes to Warren and Bristol four days and to Woonsocket and Pascoag two days. Another Autocar travels to Apponaug and East Greenwich three days a week. A Reo goes up the Blackstone Valley to Woonsocket three days a week. With the exception of the latter vehicle each of these trucks bring back an average load of from 1½ to two tons. Each makes from 50 to 60 stops on a trip.

White Hauls Big Loads.

The horses and wagons are used for short hauls, are employed in running around Providence where stops are made every few yards and are also used in jaunts to and from freight houses and piers. Trucks not active in collection service are also put into service in this way. In addition to hauling big loads of freight the White truck is often sent to the Providence branch office, where the collections made in barrels by several

wagons are hauled to Pawtucket in one load.

A garage to house trucks now owned or to be acquired in the future is a boon which officials at the Pawtucket plant hope for at an early day. Right now these trucks are kept overnight in vari-

ous spare buildings on the company's property. Each driver cares for his own truck. The company blacksmith looks after ordinary repairs. When the break is beyond his ken the truck goes to its respective service station.

Except in congested districts drivers

are instructed to stop their motors on each of the near three-score daily stops. They are allowed to leave the motors running at points where traffic is such that cranking is inadvisable. The motor is always stopped on the trucks which have been equipped with starters.

PNEUMATIC TIRES SAVE PRODUCE

A. M. TOURTELLOT, 37 Canal street, Providence, R. I., probably the largest produce dealer in Rhode Island, has been educated to truck utility through the school of ex-

1½-ton trucks and now has a fleet of four. For short trips four one-horse wagons and one two-horse wagon are used.

Mr. Tourtellot says that big trucks do

Providence merchant finds that the tires save the truck, save the driver and save the goods. This latter is important. Peaches, pears, plums and similar products of the orchard cannot stand rough handling and every bump decreases their value. These fruits are now delivered by his trucks without damage, although roads of nearly every kind of surface are traversed by every truck in its daily rounds.

Mr. Tourtellot is a shouter for standardization. Not only has he decided to stick to International trucks, but he uses only one make of tire.

He maintains that standardization is of special benefit to the concern which has no purchasing agent.

"When anything goes wrong with my trucks," says the Tourtellot transportation man, "I just go to the telephone and call for 'Hopkins' (B. F. and A. W. Hopkins, Rhode Island distributor of International trucks). 'I do not have to do any extensive figuring or trust to my memory as to where or whom to call. The same follows when I need a tire. One company handles all the insurance. My trucks give me no concern or worry when they are standardized in this way.'

Although the Tourtellot trucks are stopping and starting all the time, they each average 60 miles a day and do it on six gallons of gasoline.



The Fleet of Four International 1½-Ton Trucks Used with Large Measure of Economy by A. M. Tourtellot, Produce Dealer, for Haulage of Perishable Stock.

perience and has his trucking delivery service down to a scientific standard basis.

He has found that small trucks of the same make, shod with pneumatic tires, exactly fit his needs. He has tried several makes of trucks of various sizes during the past eight or nine years. He has finally standardized on International

not suit his needs and are not economical in his business. He finds that speed is a requisite to prompt delivery in the produce market. Small trucks go faster and their speed is accelerated through the use of pneumatic tires, all of the Tourtellot trucks having such equipment all around.

In addition to covering the ground the

TRUCK TERMINAL PLANNED FOR ROCHESTER, N. Y.

Rochester, N. Y., is the latest city to plan a motor truck terminal and the project is going along at such speed that its early realization is certain. One important step contemplated is the organization of all motor bus, express and freight line owners. The Rochester Auto Truck Dealers' association has indorsed this move. Three of the big department stores are reported ready to back the terminal proposition to the tune of \$20,000.

Two terminal plans are under consideration, the one at the Twin Cities and the one at Grand Rapids, Mich. It is possible that the best ideas of each may be incorporated in the Rochester institution. A plot of land is under consideration and committees to decide on a site and make plans for the financing of the project have been appointed and are working with the Chamber of Commerce traffic committee.

McJAMES SELLS SAMSONS.

C. E. McJames has been appointed manager of the Samson truck and tractor department by "Lucky" McFall, Manteca, Cal.

Commercial Haulers Organize National Association with 4400 Members

The Motor Truck Association of America was not the only national organization which came into being during the recent convention of the National Team and Motor Truck Owners' association at Chicago. The National Association of Commercial Haulers was also formed and gets away from the mark like it means business. It includes only truck owners who sell transportation as a business.

The organization has for a nucleus the Pacific Draymen's association, with 2200 members in the State of California, and which is affiliated with other cartage bodies on the coast with an additional 2200 members. The association thus starts with 4400 members on the Pacific coast alone. Judge Sandborn of the Cleveland Cartage association was associated with C. R. Collins, secretary of the Pacific Draymen's association, in organizing the new body, which means that a strong foothold has already been secured in Ohio. The new association will devote itself exclusively to the problems of the commercial haulers. The headquarters of Secretary Collins are at Los Angeles.

RURAL EXPRESS IN ATLANTA.

The Farm Bureau of the Atlanta, Ga., Chamber of Commerce and the Georgia State Agricultural college, in conjunction with county agricultural agents, extension specialists and other agencies, are establishing intercity motor truck transportation lines from Atlanta to surrounding cities and towns. The chief purpose is to haul freight and express from the city with return loads of farm produce.

ST. LOUIS STRIKE ENDS.

The Team and Truck Owners' association of St. Louis has reached an agreement with striking transfer drivers and chauffeurs by which the men accept \$34.20 a week instead of the \$36 demanded. Drivers of the larger trucks get \$40. The hours are cut from 10 to 9½ hours. The former wage was \$27.50.

TO FILL EMPTY TRUCKS.

The Cincinnati Chamber of Commerce is to establish a central office where drivers of empty trucks may get in touch with shippers. It is believed that this plan will result in the hauling of several hundred tons of extra freight daily.

LONG WHEELBASE TRUCKS INSURE HANDLING BIG TONNAGE

GEORGE CORPRON, Alverson avenue, Providence, jumps his hauling tonnage by the use of trucks with lengthened wheelbases. Mr. Corpron conducts a general trucking business and has three 3½-ton Paige trucks, each with a wheelbase of 190 inches. He claims that these three trucks will carry any load that a five-ton truck can.

Mr. Corpron accents the word "carry." He says that the lengthened wheelbase allows the truck to bear its cargo uniformly and that trucks of lengthened wheelbase actually carry a load while other trucks are apt to "drag" the load.

The one objection to the lengthened wheelbase is the fact that the trucks need considerable space in which to turn around and cannot go into odd corners as can trucks of less length. Mr. Corpron overcomes this handicap readily by having a 3½-ton Oneida truck, which he uses for such work.

The Paige trucks all have platform bodies, with Detroit weather proof cabs. The cabs are open in summer and closed in winter. These trucks are also equipped with special sides and racks which allow the rapid installation of a rack body if the haul requires such equipment. Mr. Corpron secured the first Paige truck which came to Rhode Island a year ago and purchased two more this spring.

Much of the hauling by Corpron is done for two Providence concerns, both having more or less to do with bricks. One of these is the Dolbey Ice Cream Co., and the other is Manchester & Hudson, dealers in brick, lime, cement and all masons' supplies. The latter has no delivery service of its own and most of its orders are for full loads in ton units.

The Dolbey Ice Cream Co. has a fleet



Paige 3½-Ton Truck with 190-Inch Wheelbase. One of a Fleet of Three Used for General Haulage by George Corpron, Providence, R. I.

of four International trucks and several Reo speed wagons, but throughout the warm season these are needed in delivery service, the Corpron trucks being called on to do all its general hauling, which is of considerable volume.

Occasionally this company's needs include long distance hauling. Two of the trucks in the Corpron service went to Jersey City, N. J., a few weeks ago and carried back cargoes of cork to be used in lining ice cream refrigerators. The cork comes in blocks a foot square and four inches thick. Although only three tons were placed on each truck, the loads were mountain high to make that tonnage.

The two trucks left Providence on Thursday at 2 a. m. and were in Jersey City at 11 p. m. the same day, stops being for meals and gasoline only. Friday noon the return trip was started, a halt being made for the night at Bridgeport, Conn. The vehicles left Bridgeport at 5 a. m. Saturday and reached Providence at 7 in the evening.

Another regular work for the trucks owned by Mr. Corpron while in the service of the Dolbey Ice Cream Co. is the hauling of salt from the freight yards. One of the Paige 3½-ton trucks, with three men, clean out a carload of 35 tons of salt in a day. This is done in five trips, seven tons to a load.

OPPOSES RAIDS ON OVERLOADED TRUCKS IN NEW JERSEY.

The Motor Truck club of New Jersey has instructed its attorneys to take up with Motor Vehicle Commissioner Dill the matter of his recent raids on overloaded motor trucks with a view to having the practise suspended. It was claimed at the club's June meeting that the commissioner has overlooked that part of the law which permits heavier loads than the regular limit on trucks with tires of larger size. Inquiry was made at the meeting as to why the commissioner suddenly had begun to strictly enforce a law which has been on the statute books for three years.

2000 GEORGIANS PLEDGE TRUCKS IN EMERGENCY.

The recently organized Georgia Motor Truck Protective association already has 2000 members. The members pledge the use of their trucks in any public emergency. The organization was formed essentially for this purpose. A membership of 5000 is anticipated before the end of the year.

Motor Truck Association Is Now National Organization of 1500 Members

The Motor Truck Association of America became a national body at Chicago on July 1 and will meet to elect permanent officers and adopt a constitution and by-laws at Atlantic City on Aug. 30. It will operate under the charter of the Motor Truck Association of America and the New York body now bearing that name will become a local branch and will be known as the Motor Truck Association of New York. The organization will work along legislative and highway betterment lines. All owners of motor trucks, irrespective of their business, are eligible.

The formation of the new body was the outgrowth of the national convention of the National Team & Motor Truck Owners' association. The chief factors in the creation of the new association were T. D. Pratt, secretary of the New York body which has donated its name to the cause; E. D. Fleming, secretary of the Pennsylvania Motor Truck Owners'

Protective association, and Tom Snyder, secretary of the Indianapolis Highway Transport and Terminal association, these three organizations having 1500 members who operate trucks for hire or use them in their own business.

TRUCK CLUB HOLDS OUTING.

The Motor Truck association of Philadelphia and three automobile associations held an outing the latter part of last month at Kugler's Mohican club on the Delaware, over 200 being present. A 35-piece fife and drum corps mounted on a motor truck helped spread good cheer. There was a beefsteak dinner, vaudeville, baseball and other pleasing features.

SEAGRAVE FIRE APPARATUS FOR NEW YORK CITY.

The Seagrave Co., Columbus, O., has signed a contract with the city of New York for the delivery of \$294,696 worth of fire apparatus.

The International Union of Truck Drivers will hold its annual convention at Cleveland in October.

BIG BODY MAKES TON TRUCK GOOD REVENUE PRODUCER

W. J. Hutchinson, 132 Pine street, Providence, specializes in hurry hauls. He carries good sized loads and he solved the problem of extra capacity without

governor to 25 miles an hour.

Mr. Hutchinson founded his speed hauler on the purchase of a one-ton Federal chassis. This is equipped with Kelly-

knew what he wanted and has it. His truck lives up to every expectation and fulfills his requirements in every way.

The body was built by the F. N. Blake Carriage Co., Pawtucket, and was designed for the Federal Truck Sales Co. of Rhode Island by J. H. Lovett, according to the requirements outlined by Mr. Hutchinson. It is 12 feet long, 21 inches deep and 5½ feet wide. The 21-inch sides are along lines usually found in bodies built to carry furniture, and are each surmounted by a furniture rail. The wheel housings have unusual clearance and on the long, low body exceptionally large freights for a one-ton truck can be carried and quickly loaded or unloaded.

Mr. Hutchinson moves many pianos and all kinds of furniture. As the body of the truck is low raising a piano is almost a matter of rolling it in. Most of his loads are carried above the tops of the 21-inch sides and a surprisingly large bulk of furniture can be transported in one load. He states that the contents of five and six well furnished rooms have frequently been moved at one haul.

The owner finds that his truck, which is the latest Federal construction, is very economical of fuel. He averages 14 miles on a gallon of gasoline and has gone three weeks on one quart of oil.



Federal One-Ton Truck, with Special Body, Built for W. J. Hutchinson, Providence, R. I., That Is an Unusually Productive Vehicle.

sacrificing speed in his own way.

A special body which exactly fits his needs is the answer. Now his truck runs to New Bedford, Westerly, Oak Bluffs or any point on call at speed controlled by

Springfield pneumatic tires, 36-6 in front and 35-5 in the rear. Then came his special body. The entire outfit stood him about \$4000, for which he might have purchased a much larger truck, but he

Advertising Managers' Convention of the M. & A. M. Called at Bedford Springs, Pa.

The convention of the Advertising Managers' Council of the Motor and Accessory Manufacturers' association to be held on the 15th and 16th of this month at the Bedford Springs hotel, Bedford, Pa., will be featured by an address on "Accessory Advertising as a Help in Selling the Complete Car," by J. C. McQuiston, manager of the department of publicity, Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

The paper will show the need for the closest cooperation between the car and truck manufacturer on the one hand and the parts and accessories manufacturer on the other. To round out the study of the situation the advertising manager of a well known truck company and a prominent passenger car company executive, will be heard, after which there will be a round table discussion of the topic. Group meetings will be held where all matters of interest to the industry will be considered.

The arrangements for the meetings are in the hands of a committee consisting of E. C. Tibbitts (chairman), advertising manager of the B. F. Goodrich Rubber Co., Akron, O. James C. McQuiston, manager department of publicity, Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.; F. W. Clark, advertising manager of the Clark Equipment Co.,

Buchanan, Mich.; S. E. Baldwin, advertising manager, Willard Storage Battery Co., Cleveland, O., and M. Lincoln Schuster, assistant to the general manager, Motor and Accessory Manufacturers' association, New York City.

CHARGE 68 OWNERS OVERLOADED TRUCKS.

At Wheeling, W. Va., 68 owners of trucks were recently arrested in one day charged with violating the city ordinance in relation to overloading trucks. Of 74 trucks held up, 68, mostly carrying coal, were alleged to be overloaded. It is claimed that these overloaded vehicles have been wrecking the streets of the city. The ordinance restricts heavy trucks to a speed of eight miles an hour and to 600 pounds per inch of total tire width.

BOOKLET ON OVERLOADING.

The motor truck committee of the National Automobile Chamber of Commerce is to issue a booklet which will point out the destructive results of overloading. The damage done to highways is listed as the chief among these. The authors of the booklet will be Robert O. Patton, Pierce-Arrow Motor Car Co., and F. C. Horner, Packard Motor Car Co.

Georgia completed more than \$2,000,000 worth of road work the past year and now has more than \$7,000,000 worth under actual construction.

Hard Drive on Credit Ban Planned by Truck Sales Managers Association.

The conference of truck sales managers held at Lake Geneva, Wis., the first end of June resolved itself into a committee to work out practical plans for overcoming the attitude of bankers in relation to the recognition of automobile paper. Particular attention will be paid to bankers in the smaller cities and country towns, many of whom have been deluded as to the attitude of the Federal Reserve board. The latter body realizes the value of trucks to the welfare of the country and has shown no disposition to curb the truck business. It was stated that there was no trouble in the East. The Pacific coast, parts of the south and the Minneapolis, Denver and Kansas City districts have been most effected.

A committee of three will have charge of the campaign. Two representatives of the industry will interview bankers in each district and dwell on the absolute necessity of maintaining highway transportation to keep business alive while the railroads continue in a crippled state.

Maryland, Virginia, North and South Carolina, four of the big agricultural states of the southeast, are said to be now suffering from the credit stringency. Following strong newspaper editorials demanding the financing of the agricultural interests considerable relief has been forthcoming and conditions are mending.

BOTTLING BUSINESS INCREASED MANY TIMES BY TRUCK DELIVERY



A Part of the Fleet of Trucks Operated by the Central Falls Bottling Co., for Delivery Within a Radius of 16 Miles.

As a builder of business the truck is handed a post of honor by the Central Falls Bottling Co., Central Falls, R. I., which has expanded in a half-dozen years from a concern catering entirely to local trade to a man-size institution distributing its product to a score of cities and towns within a radius of 16 miles from the point of production.

In that period the daily business of the company has doubled, tripled and quadrupled, and then repeated the operation until today its 11 trucks are distributing nearly 20 times the quantity that was doled out by a flock of horses a few short years ago.

The bottling business calls for trucks louder than any other venture we can recall at this writing. This is particularly so from the standpoint of speed, efficiency and economy.

The most potent reason for the need of trucks rather than horses in this industry is that fully half of the year's sales are made in the three warm months. Business is then rushed and long hours are necessary. The trucks carry bigger loads and deliver them quicker.

The big economy point is that if horses were used it would be necessary to maintain them during the nine months when slack conditions prevail. Getting but slight return the upkeep of the horses would go on during this three-quarter part of the year. Manager Frank Keron estimates that he would need at least 40 horses to care for his business today, admitting of course, that even with this number it could not be handled as efficiently as by engine-propelled vehicles. The feeding and care of these 40 horses during the nine months when their services are in slight demand would be a fatal handicap to any business. There is no need to dilate on the cost of feeding a horse in these times. Only millionaires can afford to stick in the horse-owning class.

The Central Falls Bottling Co.'s fleet consists of seven Seldens, two Reo Speed Wagons and two Tonfords. The Selden equipment comprises three 2½ tonners, two 2-tonners and two 1½-tonners. Being the larger machines the Seldens are naturally called upon for

the longer and heavier hauls.

Last year the Federal tax on soft drinks was \$72,000,000. With the hold-over supply of the hard stuff fast dwindling, old brown ale turning to near-beer and prohibition becoming a stern reality the demand for the lighter beverages will be far greater this year than ever before. The bottling concerns of the country are recognizing the need for better transportation equipment and this field offers a splendid prospective to the truck industry.

The bottler must have an instrument for delivery that can be depended upon and can cover ground. Hurry calls are part of the day's work through the three months of the busy season. The thirsty fellow usually has a favorite even in the soft drinks class but he is thirsty when he is thirsty and if he cannot get just what he wants he is going to relieve his thirst with the next best article.

The bottler's delivery failure therefore means a money loss which can never be recovered. The business lost by a bottler who has an antiquated delivery service goes to his rival. The stock of the bottler must be kept on the move or production is clogged and, in cases, halted entirely.

The Central Falls Bottling Co. has found that motor trucks respond to all the peculiar demands of its business. Unlike horses they can be worked overtime when pressure of business warrants. They can make a 15-mile run on high speed and give the dealer his supply when the demand is strongest. They can work night and day.

The most potent attribute of the truck as applied to the bottling business is its ability to eat up distance, thereby widening the zone of operations and enabling the manufacturer to seek and secure trade he would otherwise be unable to serve. Through their greater power as distributing agencies the bottler is able to reach out into the nearby cities, outlying districts and suburban towns and to cater to summer resorts and crossroads stores, where the call for soft drinks is constantly on the up grade.

(Since the company has had truck equipment it has established a system of daily deliveries in three cities, Central Falls, Pawtucket and Providence, the two latter of which were outside its field in the days of horse-drawn delivery service. On two days a week one or more trucks go into Massachusetts, delivering in North Attleboro and Attleboro. Also on two days the products of the concern are taken by truck to the Pawtuxet Valley and on two other days to Warren and Bristol, these points being about 16 miles from the bottling plant. On one day a week one or more trucks go up the Blackstone Valley for a distance of 10 miles, taking in the towns or villages of Valley Falls, Lonsdale, Berkeley, Ashton, Albion and Manville.

The Central Falls Bottling Co. was organized in 1882 and kept the even tenor of its way, catering only to Central Falls, until the truck came to its aid a half dozen years ago. Since then it has been hitting only the high spots and is now a leader in its field.



One of the Selden Trucks with the Special Side Steps for Reaching and Handling the Bottle Racks at the Loading Platform of the Company's Plant.

SHOWS, TOURS AND DEMONSTRATIONS

TRUCK DEALERS FIGHT LIMIT LAW IN SYRACUSE, N. Y.

The Syracuse Motor Truck Dealers' association is waging a bitter fight against the city fathers who have resurrected an ancient ordinance limiting truck loads to 10 tons overall, and ordered its enforcement. This is in spite of the fact that the state law put the limit at 25,000 pounds. Dealers claim that the ordinance would kill off the sale of five-ton trucks, most of these vehicles when heavily equipped going over five tons before a load is taken on.

An interesting feature is the fact that the city's flushing trucks carry a load in excess of 10 tons and that state and county highway trucks often exceed this mark. Two arrests were made, but the cases were adjourned. The dealers ask that the ordinance be amended to coincide with the state law.

New York Truck Dealers Plan to Hold Show During Week Cars Are Displayed

The Automobile Dealers' association of New York city is planning to hold a truck show in the metropolis the same week as the national passenger car show at the Grand Central Palace. The show will be limited to New York dealers, who will be given sufficient space to show their machines in operation.

The National Automobile Chamber of Commerce, which will stage the car exhibit, is in perfect accord with the enterprise.

Although leading dealers have voted for the show no site will be selected or no formal decision to go ahead made until the association directors approve the project.

President William C. Poertner and W. O. Crabtree, director representing the truck division, will appoint the committee to handle the show.

CINCINNATI TRUCK TOUR.

The Cincinnati Truck Dealers' association is conducting a "motorize the farm" campaign and members have recently toured eastern Indiana and southern Ohio in furtherance of this cause. In line was a fleet of 25 trucks, trailers and farm hauling equipment. The farmers were shown what the truck can do in demonstrations by day and through lectures and moving pictures by night. A 15-piece jazz band was with the motorcade.

TRUCKS HAUL RACE HORSES.

Owners of race horses are turning to the truck almost with unanimity for the transporting of their equines from track to track. The freight tieup started this movement and the quality and economy of the service caused its continuance and expansion.

Wisconsin Truck Dealers' First Annual Demonstrating Round of State

The first annual Wisconsin Motor Truck Demonstration Tour reached Milwaukee, July 3, the point from where it started June 28, after covering 350 miles and with a record of having accomplished some exceptional missionary work. It was limited to two-ton trucks with pneumatic tire equipment. Free demonstrations were given, trucks going into the fields of the farmers to do whatever hauling was at hand. Frank A. Meyer of the Sterling Motor Truck Co. officiated as tourmaster.

The committee comprised members of the motor truck division of the Milwaukee Automotive Dealers' association as follows: Alfred Reeke, chairman; Bart J. Ruddle, executive secretary; W. P. Upham, H. P. Robinson, M. D. Newald, C. W. Beckler, James T. Drought and Manning Vaughan of the Milwaukee Sentinel, which sponsored the tour.

Twenty distributors participated with the following line of trucks: L. D. Frint Motor Co., Olds; Downer Garage & Sales Co., Winther; Nash Motors Co., Nash Quad; Pauly Motor Truck Co., Federal; Stoughton Wagon Co., Stoughton; E. M. Sullivan Motor Co., Diamond T.; J. E. Derse Co., Commerce; Motor Products, Inc., Republic; Badger State Sales Co., International; Curtis Auto Co., Reo; Sterling Motor Truck Co., Sterling; Alfred Reeke Co., Nash; M. D. Newald Co., Stewart; Schmidt Motor Car Co., Clydesdale; West Side Buick Co., GMC.; Herford-White Co., Graham; Kissel-Kar Co., Kissel; E. W. Clark Motor Co., Maxwell; Osmond Motor Car Co., Paige; Upham-Schacht, Inc., Service.

Boston's 1921 Show Will Be Combined Exhibit of Trucks and Cars Held Next March

The Boston Automobile Dealers' association has voted to hold its annual show at about the usual time and to continue it as a joint exhibition of passenger cars and trucks. J. S. Hathaway, manager of the White branch, resigned as vice president because his company is no longer engaged in the manufacture of passenger cars.

OFF ON TOUR TO CANADA.

The International Good Roads Tour of the Michigan Pikes association was begun at Detroit, July 14, as scheduled. The 200 tourists will cover a total of 1346 miles, an average of 103 miles a day and 20 miles an hour. A total of 88 meetings will be held, including the big mass meeting in Toronto, and 50,000 good roads buttons will be distributed.

SUCCESSFUL PEORIA TOURS.

A series of "Ship-by-Truck" tours held during the month of June out of Peoria, Ill., to four different rural sections, which aimed to arouse interest in trucks and to launch a movement for the establishment of truck express lines carrying the products of Peoria to the outlying towns of the county, is already reaping results. Another series of runs designed to put the agriculturists in the prospect class will be started at once.

The tours have been carried out on a snappy scale. The trucks were decorated and speakers were carried along to tell the message of power transportation. Figures were given showing how economically daily express service might be had. Loads were carried free of charge.

Motorize the Farm Campaign Will Be Launched in States of New York and New Jersey

Under the auspices of the Motor Truck Association of America 400 truck and implement dealers met late last month at the Waldorf-Astoria, New York city, and launched a campaign for the motorization of farms in New York and New Jersey. Dealers within a 100-mile radius were present. The gospel of power farming was preached by A. R. Kroh, owner of a large ranch in New Mexico, and a former truck dealer. The plan to conduct the farm motorization drive was unanimous. The details will be arranged by the Motor Truck association.

EXHIBIT MAXWELL TRUCKS.

At least 35,000 persons saw the exhibition given during a recent remarkable educational tour run out of Fargo, N. D., by the Horton Motor Co., northwestern factory distributor for the Maxwell-Chalmers. The trip consumed 43 days and something like \$75,000 worth of chassis was shown in 172 towns. About 3000 miles were covered over all manner of roads. The Maxwell trucks, carrying the two auto and one truck chassis, averaged 16.7 miles per hour.

MEMPHIS TOUR A SUCCESS.

The Memphis Automobile Dealers' association conducted a "motorize-the-farm" tour which left Memphis, June 28, and was on the road the balance of the week. The tour was entirely educational and accomplished its aims. Band concerts and moving pictures at night were features of the tour.

OKLAHOMA TO SPEND \$12,000,000.

The State of Oklahoma is planning to spend \$12,000,000 for highway construction.

WINTER HAULAGE DEPENDS ON BREAKING SNOW AFTER STORMS

Special Equipment Must Be Obtained by States, Towns and Cities to Clear Highways—A New Type of Machine That Is Specially Designed for Municipal Service.

WITHOUT question every person living in the United States had last winter personal experiences with snow that will long be remembered. The unprecedented falls of snow and the obstructed streets and walks can be recalled chiefly to establish the fact that without exception neither national, state or municipal governments had available the equipment that is necessary to clear the highways so that vehicle or surface railroad traffic could meet the needs of the people.

One of the reasons that prompts the publication of a snow removal article in mid-summer is that whatever shall be done by states and municipalities to procure adequate equipment to keep the streets and roads open for traffic so far as possible must be planned sufficiently in advance of the seasons to insure it being in readiness when needed. As snow falls in some of the northeastern and northwestern states in October, and can reasonably be expected in many others during the following month, the suggestion would appear to be fairly well timed.

One may state that there is little probability snow will accumulate to so great a depth as last winter for a considerable period; that due to the fact that railroads were greatly congested and the highways more generally used for haulage than ever before, the obstruction of transportation of every kind was more acutely realized. But preparedness is vitally necessary.

Probably every municipality and a number of states make annual appropriation for snow removal. For several years some states, among them Massachusetts, New York, Pennsylvania, Connecticut, New Jersey, Rhode Island and others in the Middle West and Northwest, have made appropriations that have been disbursed with the object of clearing main highways between commercial centers, while the counties, cities and towns have expended funds appropriated annually for general clearing of streets.

Lack of Snow Removing Equipment.

As a rule the towns and cities have some equipment for snow removal, but the states have usually depended upon contractors; frequently those who engage in road building, to break the roads. There is probably no state that has anything like the number of plows and vehicles that are needed to undertake road breaking on a large scale, such as working on all main highways of a state at one time. But the present demands of road transportation would seem to be such as to justify the use of equipment

that could be adapted to power truck propulsion.

Within the last year and a half the Department of Agriculture has distributed to the different states thousands of trucks and a few tractors that are intended for use constructing and maintaining highways, and some of them now have several hundred each that are operated by the state departments or by contractors engaged in state work on roads. Seemingly these would be, in part at least, available for snow removal, provided, of course, that they were equipped with plows and were located along the routes that are to be kept clear of snow.

Varying forms of snow plows that can

the machines have been driven over the snow, drawing heavily weighted plows.

There is no method of clearing snow from highways that has approval on the ground of economy or efficiency. Generally the work has been done that will best deal with each individual condition in the judgment of those directing the work, and this is probably the better plan rather than undertaking to plan what cannot be accurately forecasted and may differ very greatly with reference to locality.

The snow plow has been found very practical where there is no actual removal of snow, save from the path of the plow, and whether it can be swept



(C) Dr. Samuel Friedman, New York City.
The Snow and Ice Removing Machine Invented by Dr. Samuel Friedman, Driven by Four Wheels, Showing the Engine at the Rear End.

be driven by trucks have been devised, some of them for use in unusual conditions, and as a rule they have been reasonably satisfactory. In some instances the tractors have been worked with excellent results, especially in the Northwest, where a number have been practically tried and have been utilized for highway construction and maintenance during the period of the year when work could be done.

Pushed Plows and Tractor Drags.

The general plan of operating has been to break a single tract through snow, if there is a considerable depth, with frequent places of greater width so that vehicles could pass each other. Where trucks are used the general practise is to push the plows ahead of them, this insuring traction for the driving wheels and requiring less power than were the plows drawn. With tractors, however,

to one side of the path or to both sides is not a matter of material consequence in the country unless there is a trolley railroad in the highway.

Where Snow Must Be Removed.

Then the tracks must be cleared and in any event the snow is piled between the tracks and the vehicle path. Unless the roads are narrow and the snow very deep there can be no reason to object to this, for whatever obstruction of the entire width of the road results it will rarely obtain for more than a few days.

Whatever the type of apparatus used with trucks it ought to be substantially built, conveniently kept to the highways where the work is to be done, and there should be a sufficient number to break the principal roads within a few hours so that there should be practically no cessation of traffic. The mileage that can be worked with each plow depends

largely upon the conditions and whether or not work is begun at the beginning or after a storm.

No one can predict the duration of storms and there might be criticism of a plan of starting road breaking if a snowfall, for instance, were very light, and there are those who might comment adversely upon starting plow work unless there was sufficient depth to justify the expense.

If, at the other hand, the work were not begun until after a storm there might be serious obstruction to traffic. This, of course, is a condition that must be obviated, and seemingly there can be no rule that will apply to operation.

Work Differs in Towns and Cities.

In the cities and large towns the conditions differ materially, often diametrically, to those met with in the country, and the demand of the people is that so far as possible both the roadways and walks be cleared. Generally this necessitates snow removal, and this is done by manual shoveling and the use of vehicles to haul it to convenient places for disposal.

movement by the steam railroads has never been fully stated, but it was enormous, and the use of the principal highways in many of the states was impracticable for considerable periods. Blockades of trolley railroads continued for weeks. Hundreds of miles of highway were made passable after long periods of obstruction only by the work of volunteers who labored with picks and shovels.

While one cannot maintain that this condition could have been insured against by preparedness there is no doubt that had the towns, cities, counties and states had equipment available the highways could have been cleared so that traffic would have been possible with power trucks and other vehicles. Probably no greater need will ever be realized by the people, and without question there can be no criticism of expenditure that will make practical continuance of road transportation, no matter what the cause.

New York Spends Millions for Equipment

In New York City the experience with storms last winter has justified the purchase of equipment at a cost of millions

Obviously snow plows can be used with extremely good results in snow, but for ice entirely different apparatus is necessary and for years unnumbered picks and shovels have been utilized.

Power trucks have been found far more economical than horse vehicles for snow haulage because they can be worked constantly with shifts of crews and there need be no interruption once operations have been begun.

In city streets and highways where car tracks must be kept clear when snow is deep it must be removed and in some instances must be hauled considerable distances for disposal. Clearing the tracks will not generally suffice when traffic must be kept moving.

Friedman Snow Tank for Big Work.

What is probably the most effective machinery yet devised is the Friedman Snow Tank, so-called, the invention of Dr. Samuel Friedman of 67 East 93rd street, New York City, which has been scientifically developed and was very thoroughly tried out during the latter part of last winter in New York City streets under the observance of the Commissioner of Street Cleaning and a number of interested scientists.

This machine consists of a very powerful four-wheel-driven chassis on which is mounted an endless chain conveyor that carries buckets and teeth. As the machine is moved by its own power the conveyor is driven and carries the snow and broken ice upward into a hopper or bunker from which it may be continuously or intermittently discharged.

The chassis is very heavily built with a Sterling six-cylinder marine engine as a power plant and the drive is the Christie patent, a type which has been developed by Walter Christie for fire apparatus tractors and for similar work where speed and heavy duty are essential. This system of power transmission has been adapted so that all four wheels are driven. As the engine is rated at 150 horsepower there is probably an excess of what might be required in any work, or at least such capacity that the engine would never be overloaded.

Machine Weighs 22 Tons.

A mechanical description of the equipment is not essential, but statement is desirable that it is 26 feet long, nine feet six inches wide, is 12 feet six inches height and weighs approximately 22 tons. The power transmission gearset has four forward speed ratios and reverse and the speed of the machine may be from two to 10 miles an hour.

When moving to and from work the speed may be 10 miles an hour, but when working the machine will clear a path in snow at the following speeds: Six-inch depth eight miles an hour; eight-inch depth seven miles an hour, 12-inch depth five miles an hour, 18-inch depth three miles an hour, and 24-inch depth two miles an hour. As the machine moves the snow is carried by the conveyor to a hopper or bunker, from which it may be discharged continuously at the side opposite the conveyor either to form a ridge beside the path of movement or in piles of 10 cubic yards each.



(C) Dr. Samuel Friedman, New York City.
The Friedman Snow Removing Machine in Action. It has Capacity to Remove 50 Cubic Yards of Snow or from 10 to 25 Cubic Yards of Frozen Snow Ice a Minute.

Obviously the streets in which there is greatest traffic must be first cleared. In these thoroughfares there are frequently single and double railroad tracks and with the walks cleared the snow is heaped between the tracks and the curbs. This may not be objectionable unless the storms are heavy and follow in quick succession. Last winter, however, in hundreds of towns and cities the streets were piled deep with snow between sidewalks and tracks and all the traffic concentrated on the tracks, which resulted in congestion and delay.

Enormous Loss by Last Winter's Storms.

In large cities the removal of snow became a work that was paramount that industry might continue. In New York city it caused an abnormal expense that ran into many millions for labor and vehicles used for haulage, while the actual loss from the retardation of industry and commerce, practically due to inadequate transportation, reached a staggering total. Such experience was realized in the entire northern half of the nation at least, and the effect was universally felt.

The shrinkage in volume of freight

so that there shall not again be so long continuous blockade of highway use, and seemingly every municipality can make preparation so far as work on the main highways are concerned.

In some of the large cities experimental work was done with various forms of equipment that was extremely interesting because of the possibilities for snow removal in heavy storms. Generally the apparatus was extemporized and constructed with the view of making the ways reasonably passable in the least time and at the lowest practical cost. In New York City endeavor was made to melt the snow and ice in the streets with flames fed by fuel oil and directed by pressure upon them, but the progress made was slow and there were not such results as would stimulate the construction of the apparatus used upon a commercial scale.

Ice a Great Obstacle.

When snow is worked on during or immediately after a storm removal can be made readily, but if it has become saturated from rain or thawing and frozen it is practically ice that must be broken.

Can Load Trucks or Pile Snow.

A flat car or a truck moving with the machine can be loaded from the chute from the bunker at the rate the snow or ice is taken up, the maximum capacity being 50 cubic yards of snow a minute or from 10 to 25 cubic yards of frozen snow or ice. A fair estimate of the capacity may be made from this illustration:

The snow when taken up by the conveyor or by shovelling will require approximately 25 per cent. more space than when on the ground, from the fact that it is broken or loosened and not compacted. This change of bulk is known in engineering terms as "expansion." The average five-ton truck body, unless specially built for bulky loads and unusually large, will carry about six "expanded cubic yards of snow or other material, so that the machine operated to maximum capacity will load a 50-yard capacity flat car or six trucks a minute provided that they can be so located beside it that there will be no cessation of discharge from the chute. Statement is made that the machine will in average work load a truck with eight cubic yards in from 60 to 90 seconds, depending upon the condition of the snow or ice.

Machine Has Two Operations.

The removal of the snow consists of really two operations, the first being the lifting by shovels or buckets attached to endless chains from the street surface to the hopper or moveable platform as the truck moves forward. The second is a transverse conveyor or hopper, (a box-like receptacle) by which the content, when filled, is released by throwing a lever for truck loading, but when moving ahead and clearing a path the gate at the side is left open and the content is discharged continuously.

(With reference to practical works statement is made that in tests made in the streets of New York city for the street cleaning department the machine removed and loaded four five-ton trucks with ice in less than three minutes. This work could have been continued for a long period.)

By Hand Loading.	
Eight men, 20 minutes, at 50c minimum, an hour.....	\$1.33
Truck at \$4 an hour, waiting 20 minutes while loading.....	1.33
Cost of loading.....	\$2.66
Truck, carting snow and returning, average 15 minutes.....	1.00
Cost of loading and carting.....	\$3.66
Cost to Municipality.	
Eight cubic yards at 54c a cubic yard.....	\$4.33
Plus expansion (25%), six cubic yards on ground expanded to eight cubic yards in truck.....	1.08
Actual cost to city of loading and carting eight cubic yards.....	\$5.40
Piling, eight cubic yards at 9c a cubic yard.....	.72
Total actual cost to city of piling, loading and carting eight cubic yards.....	\$6.12
Cost of Removing Eight Cubic Yards of Snow.	
Truck and labor, hand loading, and disposal.....	\$6.12
Truck and machine work and disposal.....	.64
Saving by use of machine.....	\$5.48

Statement of Operating Cost.

Interesting data has been prepared by Dr. Friedman, owner of the patent, making comparison of loading a truck with eight cubic yards of snow and ice by hand and with the machine. These are shown in parallel in accompanying table.

Capacity Depends on Truck Service.

Claim is made that with two hours allowed for oiling, greasing, fuel, oil and water replenishments, adjustments, inspection, minor repairs, etc., the machine can be worked 22 hours daily, 11 hours by each of two crews, and that if the trucks are available 1300 vehicles can be loaded, each with eight cubic yards of snow, compressed from 16 cubic yards.

Estimate of the saving that is possible can be made, but this will necessarily be empirical and not practical of realization, for results will depend largely upon the

Those in charge of street and highway work maintain that the cost of trucks is large and they can only be worked for removal with gangs of men that will insure quick loadnig. Labor has not been obtainable since 1914 save at very high rates, and whatever has been available has been inefficient when compared with other workers. This may be due in part to the fact that men as a rule are not trained for pick and shovel work and have not the physical endurance to afford the results that might be realized in other operations.

Useful for Large Work.

With machines the work could be carried on very rapidly and in average falls of snow considerable mileages of streets could be broken and made passable for traffic in comparatively few hours. There would be every reason for working con-



(C) Dr. Samuel Friedman, New York City.
Forward End of the Friedman Snow Removing Machine, the Conveyor Extending the Entire Width of the Chassis Having Sufficient Power to Cut Solid Ice.

number of trucks that are obtainable and the method of operating them so that there will be the least loss of time.

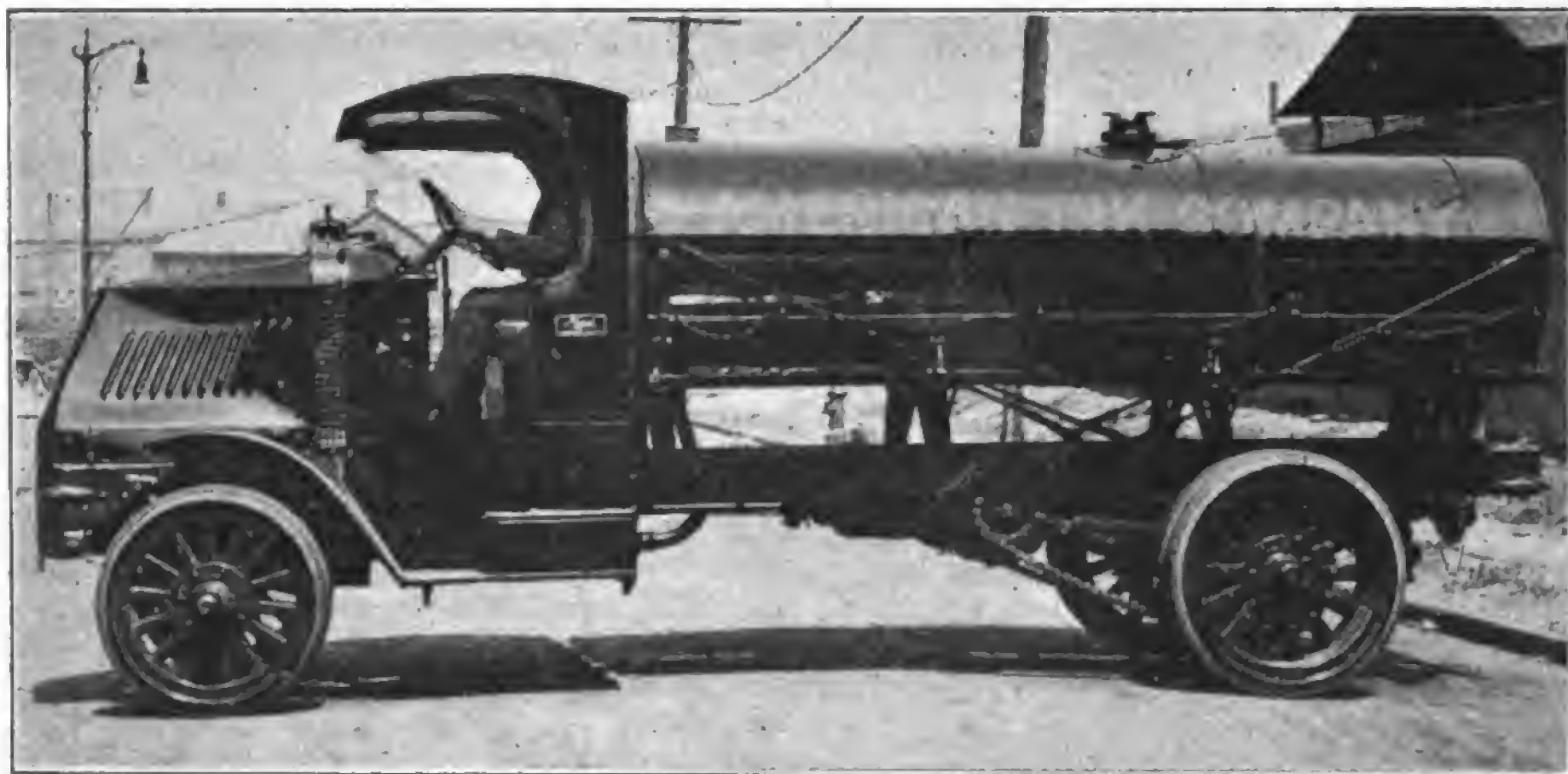
stantly, provided that trucks were obtainable.

In connection with this article emphasis should be made that the boards of trade and chambers of commerce, truckmen associations and all other bodies that are directly concerned in the clearing of snow from highways, especially the main roads between commercial centers and what are known as the through trunk lines for vehicle traffic, should take up the matter of snow removal with the state, county and municipal officials to the end that equipment shall be obtained and shall be available when needed during the winter. Not only this, the officials in charge of the work should develop plans for operating so that work shall be begun whenever necessary and carried on efficiently.

FOUNDRY AT BENTON HARBOR IN NEW HANDS.

The Benton Harbor Malleable Foundry Co. has bought the plant and buildings of the Crary Machine Works at Benton Harbor, Mich. The latter concern will build a new plant.

UNUSUAL PHASES OF TRUCK SERVICE



Special Tank Designed for American Ink Co., for Delivery of Ink to the Daily Newspapers of New York City, This Manner of Handling Being a Decided Economy.

New York Newspapers' Ink Supplies

Now Delivered by Tank Trucks

Carrying 750 Gallons.

The latest method of transporting ink in bulk is to ship it by truck in a tank body as oil has long been carried. The American Ink Co., Hoboken, N. J., is using a Mack tank truck of 750 gallons capacity to supply New York newspapers with ink. The elimination of small containers for carrying liquids on long hauls has been much desired and the tank plan seems to be the best yet conceived.

In a modern newspaper building ink is stored in a tank near the roof. This tank is connected with the presses by pipe lines. The American Ink Co. delivers ink in bulk, attaching a hose to the filler pipe outside of the building. Through this pipe the ink is rapidly pumped to the storage tank.

When the sales engineers of the International Motor Co. first considered transporting ink in bulk, they were forced to find some method of preventing the ink's congealing in cold weather. This difficulty was satisfactorily overcome by passing the exhaust pipe of the engine through the tank.

JUDGE PHILIP S. POST DEAD.

Judge Philip Sidney Post, vice president of the International Harvester Co. and the author of the company's industrial relations plan, died June 27 at his home, Winnetka, Ill., aged 51 years. He was born in Vienna, while his father, Gen. Philip Sidney Post, was American Consul General there. He had been general counsel of the company since 1910 and was elected a vice president in May in recognition of his splendid services. He was entrusted at that time with special executive duties, including the company's public relations. He had long been prominently identified with the corporation's welfare activities.

Machine Tool Equipped Trucks

Proposed for Emergency

Fleet Repairs.

C. J. Van Landeghem, transportation engineer of the Four Wheel Drive Auto Co., Clintonville, Wis., manufacturer of the FWD truck, predicts that the machine shop truck will become as necessary and vital a factor for commercial use as it was during the war. He sees an early day when every large fleet owner will have a repair shop harnessed to a power vehicle.

"The continuous operation of every truck is an important consideration with a fleet owner and in this respect the machine shop truck has proved itself a time and money saver through its ability to go direct to the cripple truck and put it in shape at a minimum of time," says Mr. Van Landeghem. "Mounted on the chassis is complete equipment to handle any kind of repair job. A separate motor furnished the power for operating the various machine tools. This embraces such mechanical apparatus as a drill press, screw cutting lathe, electric grinder, blow torch, welding outfit, forge and more than

1000 other pieces of machinery and tools.

"Each tool and piece of machinery has its own location, insuring compactness when the end and side panels are up and the truck is in motion."

COL. ALDEN WORKS WITH FEDERAL HIGHWAY COUNCIL.

Col. H. W. Alden, vice president of the Timken-Detroit Axle Co. and past president of the Society of Automotive Engineers, has been appointed to represent the latter organization on the Federal Highway Transportation Council and will serve on the council's committee on sub-grade in its relation to road surfacing. Col. Alden has been a deep student of motor transportation engineering and his counsel should be of invaluable aid to the committee.

BURGESS FOR SOUTHERN TRUCK PRODUCTION MANAGER.

The Southern Truck & Car Corporation, Greensboro, N. C., has engaged W. B. Burgess, formerly with the Texas Motor Co., as production manager. This move relieves President J. A. Norford, who has been filling this post.



Type of Truck Repair Shop Adapted for Work with Large Fleets; at Left, with Sides Lowered to Form Platforms for the Workmen; at Right, the Sides Raised and the Machine Ready for the Road.

TRUCK CARGOES RICH BOOTY FOR BANDITS IN TWO STATES

**Organized Highwaymen in New York and Pennsylvania
Raid Freighters Despite Police - Insurance Companies
Compelled to Protect Property - Robbers Operate with
Keen Knowledge of Valuable Shipments.**

Memories of Soissons, Verdun and Mons are brought back to veterans of Motor Transport Corps service who dare to drive a truck through the wild and woolly states of New York and Pennsylvania in 1920.

To the uninitiated warning is hereby given that no driver should enter either of the states named without being armed to the heels.

It has come to be the exception when a truck crosses either state without encountering at least one holdup attempt.

Bolder and bolder have become the highwaymen until the thrilling times of the stage coach robberies of bygone days are revived, although on a far broader scale.

Where one coach was held up in the untamed West of years ago, scores of trucks are menaced by organized bands, who have no call to fear the vengeance which was visited on the robbers by the cowboys of the Buffalo Bill period.

The lure today is far greater than it was back a half century ago. Every truck bears a rich cargo. Few loads are valued at less than \$50,000, and many of them are worth a quarter of a million dollars and more.

State and municipal police appear to have no interest in these proceedings and the burden of coping with these marauding adversaries is put squarely on the shoulders of the insurance companies, who are getting more skittish every day as to what loads they insure and are bound at an early date to put the rates at a notch that will be nigh the prohibitive peak.

Meanwhile, the consumer, Mr. Public Citizen, who has hitherto not heard a word of these depredations, pays the bill, as per usual.

Why the light of publicity has not been turned on these happenings is a mystery. MOTOR TRUCK is convinced that it is only fair to the truck drivers, owners and manufacturers in other states to publish broadcast these doings, on the policy that forewarned is forearmed.

Holdup Business a Science.

The business of holding up and robbing trucks in New York and Pennsylvania—and it is a business—has been reduced to an exact science. Whether any cost figures are kept is unknown. Certain it is that the men engaged in this enterprise are highly organized, well trained and highly efficient in their chosen work. They can appraise the value of a load at a glance.

In addition to being skilled in their art they are courageous if the hardihood required in such work can be classed as courage. They take all kinds of chances and a bullet whizzing by their ears only spurs them on to sterner efforts. They operate in touring cars and either the men or the machine must be brought down before their efforts can be frustrated.

Many of them have been caught. The big insurance companies are no mean antagonists. Traps have been laid and oftentimes the quarry has been run down and captured. For each highwayman put out of the running two take his place. The insurance men are keeping up the fight, however, and with the assistance of police, press and public, law and order may yet be returned a winner.

A Sherlock Holmes Stunt.

One Sherlock Holmes stunt by agents of the insurance companies has been highly successful. Detectives, or men anxious to play that part, have been engaged on a win or lose basis. So that they can be depended upon for their con-

tract calls for no stipend unless they bag their game.

An attractive load is made up. The truck is piled high with cases of merchandise which will readily appeal to the eye of the road robber. In reality each case carries a detective, armed with a short-barrelled shotgun, the kind that spreads its message over a wide area. The driver is also a detective, but he readily submits when called on to raise his hands on high.

After the holdup has been successfully pulled and the desperadoes get ready to examine the merchandise, the covers of the cases flop off at a preconceived signal and the contents of the shotguns go where they will do the most good. If the highway men are not hurt bad enough to be caught immediately they are marked so that they can be readily run down. If they escape momentarily they are forced to visit a physician in short order and their trail is again picked up in this manner.

A Pinkerton Roundup.

One notable haul of truck looters was made by Pinkerton detectives and was as nifty a bit of work as has been turned in since Dogged Dan was a purp. A truck loaded to the rails with silk was held up, the driver bound and gagged and left by the roadside and the vehicle relieved of its cargo, worth many scores of thousand dollars, found the day following.

The truck which was held up in Pennsylvania on its way from Philadelphia to New York, was owned by a New York

man who is methodical in his business methods. This attribute, backed by the craftiest kind of detective ability, was the undoing of the men who pulled the holdup. In the first place the truck had been placed under the protection of the Pinkerton Detective Agency. Further, a rule of the firm provides that the odometer figures be checked each time gasoline is taken on. This rule was the big clue when the sleuths took up the trail.

Odometer the Clue.

When the Pinkerton men got on the job they first noted the figures on the odometer. Then they went back to the gasoline station, where, by the way, the robbers had taken on gas the same time as their quarry. They ran the truck over the road to the scene of the attack and from there went over the several routes covering the distance to the point where the vehicle was abandoned until they found the one which brought the odometer to the exact figures it had reached when stopped after the theft.

Knowing the route over which the highwaymen had gone the detectives realized the goods must be located somewhere between the place where the attack was made and the spot where the truck was discarded. They searched every house along that stretch of roadway. In a shed in the rear of one of these buildings the several tons of silk were located. The rounding up of the gang of outlaws was then ordinary routine for the detectives. The goods and the men were in the hands of the Pinker-

ton force 72 hours after the holdup.

Many truck drivers today are ex-servicemen and their disregard of danger has foiled numerous holdups. As a matter of fact the driver who is conscientious and makes a stand gets away with it oftener than not. There are several reasons for this result. One is that the holdupmen seldom attack from the front. They usually draw up from the rear and either attempt to stop the truck by firing a shot or by boarding by climbing over the rear or jumping from their car to the truck running board.

This jumping act is a decidedly dangerous performance today when many trucks are shot with pneumatics and can hit up a speed of 20 or more miles per hour. When the attack is made by blazing away from the rear the driver has little to fear, as the cargo usually forms an impenetrable breast works.

Few attempts are made to hold up a truck from the front for the reason that the hardy driver will not hesitate to send his truck tearing into the touring car, knowing that while he will damage his machine he will put the car out of commission, prevent the highway men from getting far away and probably effect their capture through the arrival of other motor vehicles and their drivers.

As in the olden days the robber band is generally stationed on a knoll overlooking the highway for many miles. Presumably they have powerful glasses which bring out in detail the load of each truck. In many cases the number is all they need as confederates in various cities are primed on outgoing loads and know which are valuable and which are not. When the men work alone, however, they can gauge the worth of a cargo with expert skill.

Five or More in Band.

The touring car and the band, the latter generally comprising five or six men, shoots out of a side road shortly after the truck passes. The driver who has been through the mill or who is anticipating trouble gets into action about this time and often fights off his pursuers. The fellow who is not tipped off in advance and does not scent danger is an easy mark.

Within a few minutes after the truck has been taken the vehicle has undergone a disguise that would make Old Sleuth jealous. The robbers are always equipped with the necessary material for a lightning change. Signboards and a tarpaulin with a new name and a new license number are the chief requisites in this conversion. Thus arrayed the truck may readily be driven through the streets of a city and directly to the door of a "fence," who may conduct a sale, parcel out the goods piece-meal or send the cargo to some other point to be disposed of. A few days later an abandoned truck is reported found.

Pick Scene of Holdup.

If the scene of the holdup is in a busy section the point is carefully chosen and the truck is driven in its original state by a path or road previously selected to an appointed rendezvous in the woods where the transformation job is effected.

The driver is disposed of in various

ways. If he has put up a fight he is liable to be bound and gagged and left along the roadside on the chance of being picked up by a driver or pedestrian. Where the driver is not troublesome he is often taken a piece into the woods and left to find his way back to civilization, the robbers first having assured themselves of a good start. Where the truck is changed in the presence of the driver the latter is naturally blindfolded during this procedure.

A truck driver who recently journeyed from Philadelphia to Rhode Island and came loaded for bear fooled a band of highwaymen. In fact the would-be robbers were twice fooled in this instance. In the first place they went wrong on the quality of the cargo. The truck bore a load of hebbles for a cotton mill, which made a likely appearance, but which would hardly have been an easy proposition to turn into money without detection. In the second place they found the driver a trifle too much for them in the matter of the holdup itself.

The pilot and helper had been warned that trouble loomed along their pathway. The driver spotted a bunch of men in the underbrush on an elevation shortly after he had entered New York state and felt that something was in the wind. The men all wore caps and dark clothing, this equipment being a safeguard against accurate description.

Driver Wins Battle.

Suspicion faded into certainty a few minutes later when a big touring car carrying the men darted out of a side road in the wake of the truck. The driver wasted neither words nor time. He gave the wheel to his assistant and stepped to the running board. Then his automatic barked.

He knew if the men were not on evil bent the shot would halt them. When the bullet only caused them to put on more speed he knew that he was up against a real holdup. If he had any lingering doubts they were immediately dispelled when the touring car crew turned loose a fusillade in his direction. With his load as barrier the driver returned the fire. He aimed at the front tires of the machine and his second or third shot hit the bullseye. The pursuing car came to a standstill and the truck went along about its business.

Heavy machinery is about the only type of load which the highwaymen pass up. Shoes, but raw leather preferred, silks, cotton, woolen and worsted goods, suitings preferred, and small machines, such as typewriters, are prey for the cargo hunters. The fact that shoes and typewriters are numbered does not phase the robbers, so brazen have they become through repeated successes.

Rifles Pilot's Pockets.

In those instances where the load proves not a paying investment, and oftentimes when it does, the driver is relieved of his personal belongings. With two men on a truck the sum of money carried to pay their board and lodging on long hauls, to buy tires, accessories, etc., is usually worth while. Tires and accessories in themselves are also valuable loot which is seldom overlooked.

Knowing the conditions in Pennsylvania and New York owners of fleets fore-ordained to travel this lawless territory are now sending a fast machine with every outfit, all moneys to be disbursed on the trip being carried by one of the occupants of the speed car.

It is reported that on their regular runs and on their recent emergency fleet hauls from New England to Akron the big tire companies have taken measures against the depredations of road robbers by purchasing gasoline and supplies ahead of time and carrying but a minimum amount of money on these trips.

In their campaign against these organized bands the insurance companies have found in a number of cases that truck drivers have been in cahoots with the robbers. In instances truck owners have been identified with them. The owners of goods are naturally exonerated from any connection with these holdups for the reason that cargoes are seldom insured for their full value.

Shippers over the highways in New York and Pennsylvania today are giving preference to men who drive their own trucks. They know that a man holding the wheel on his own truck will never give up the ship.

FRANKLIN EMPLOYEES MAY BUY STOCK ON TIME.

The Franklin Automobile Co., Syracuse, N. Y., is giving its employees an opportunity to purchase common stock of the company on the time payment plan. The right to acquire one share of common stock at \$50 per share goes with the purchase of every two shares of preferred at \$100 a share.

The stockholders of the company have ratified the financing plans by authorizing an issue of no par value common stock. The present common stockholders will receive four shares of no par value for each share of present stock. A quarterly dividend of 75 cents a share on new common has been declared.

NEW PLAN OF INSTRUCTION FOR TRUCK SALESMEN.

The Truck Committee of the National Automobile Chamber of Commerce has called a conference of the sales managers of all the truck factories in the Detroit district to be held in that city at an early date to consider a new course of instruction to train men for truck salesman, the plan being the idea of the Vocational Counseling Department of the Detroit Institute of Technology. It is planned to put truck selling on the scientific basis of supplying equipment that will save money and increase profits the the business where it is installed.

A SIGN OF THE TIMES.

A sign of the times is the action of the Sandusky County Horse Owners' Mutual Protective association of Ohio in changing its name to the Sandusky County Automobile Mutual Protective association.

Republic Truck Co. Host to Michigan-Canada Road Promoting Tour

There will be two big nights for the participants in the 1920 International Good Roads Tour of the Michigan Pikes association, July 14-29, through Ontario and Michigan. One of these will come July 16, when the tourists will be entertained jointly at Toronto by the city of Toronto and the Province of Ontario. The other happens July 27, when the travelers will be the guests of the Republic Motor Truck Co., at Alma, Mich. Camp will be pitched near the truck plant and the company will entertain the members of the motorcade at dinner.

At Toronto the visitors will be banqueted at the King Edward hotel at 6 p. m., when Premier E. C. Drury, Dominion Minister of Highways, J. C. Campbell, Ontario Minister of Public Highways, F. C. Biggs, the mayor, board of control and city council of Toronto, and representatives of the Ontario Motor league, the Canadian Automobile association, the Ontario Good Roads association, the Toronto Board of Trade and other public bodies, will be present.

Following the banquet the tourists and their hosts will march to Queen's park, where a good roads mass meeting will be held at 8 o'clock. The Ford Motor Co. band, which is to take part in the tour, will lead the parade. President G. A. Hodgson of the Ontario Motor league will preside. Capt. W. S. Gilbreath, chairman of the Michigan Pikes association and manager of the Detroit Automobile club, has secured George M. Graham, general sales manager of the Pierce-Arrow Motor Co., and a member of the Motor Truck Committee of the National Automobile Chamber of Commerce, as one of the speakers. There will also be an Ontario speaker. A band concert will precede the addresses. In the event of rain the Parliament building will be thrown open to the good roads enthusiasts.

Brig-Gen. Drake has named Capt. F. C. Hecox as observer for the Motor Transport Corps in the operation of the motor truck convoy, consisting of 17 trucks. The train will average 103 miles per day against the usual 55 the army requires and the trucks will be mounted on pneumatic tires. A feature that will also appeal to the observer will be the erection, operation and maintenance of the camp for the tourists, who will be under canvas 14 of the 15 nights they are out. It is anticipated that Canada will also have a military observer.

The electric equipment for lighting the camp will consist of two Delco-light generators and storage batteries. This type of equipment is designed for farm lighting and small municipal plants. The Delco-light will be carried on a two-ton Packard truck.

Standardization of products will be considered at a meeting of the Automotive Wheel association, to be held at Clifton House, Niagara Falls, N. Y., Aug. 10.

DECIDE ON STANDARDIZATION OF FRONT HUBS.

Over two-score representatives of the automotive industry met at Atlantic City, N. J., last month under the auspices of the Automotive Wheel association to plan for the standardization of wheel hubs for trucks and automobiles. It was agreed that the standardization of front hubs should be first sought. It was shown that axle manufacturers are anxious for standardization and would redesign their products to fit any standard design decided upon by the wheel makers. Much progress was made and a standardized front hub appears to be an early probability. In the meantime questionnaires have been sent axle bearing and wheel makers and a standard design will be evolved from their replies.

Railroads Endorse Truck Haulage for Shipping Short Distances

Railroad officials who have responded to queries from F. W. Fenn, secretary of the Motor Truck Committee of the National Automobile Chamber of Commerce, indorsing the value of the truck in short hauls, and thereby as an adjunct of the railroads, are President Daniel Willard of the Baltimore & Ohio, General Manager C. L. Bardo of the New York, New Haven & Hartford; President H. E. Byram of the Chicago, Milwaukee & St. Paul; President J. E. Gorman of the Chicago, Rock Island & Pacific, and Vice President Norman Call of the Richmond, Fredericksburg & Potomac.

President A. H. Smith of the New York Central has gone still further and is seriously contemplating going into the truck business. The New York Central is considering the project of purchasing fleets of trucks with demountable bodies. Its plan of operation would be something akin to that now carried out at Cincinnati.

Truck Salvaged from Junk Heap Earns Many Times Its Repair Cost

Thomas J. Rowen, Harris avenue, Woonsocket, R. I., probably holds the world's record as a winning investor in the truck field. Mr. Rowen has a vehicle which cost him a trifle over \$100 and which has been running strong for over a year and is going good today.

Mr. Rowen is in the junk business. In the winter of 1918 he purchased for \$80 a Selden 1½-ton truck, which had been given rough wear by its owner since 1913. The purchaser felt that he had secured his money's worth and that in operating six years under trying conditions the machine had fulfilled its mission and was ready for the junk pile.

The old truck was actually thrown on a heap of scrap metal and remained there through the winter's storms. In the spring Mr. Rowen looked over the rig and thought he would see if it could not be put in running shape. A drive-shaft was bought for \$6.25. Mr. Rowen's son, Augustus C., and a helper, who was paid \$20, overhauled the machine.

Then on May 2 the truck was put in commission and has been on the job ever since. Practically no repairs were required for over a year, a recent damage to the differential being the only expensive work since the truck was restored. This part has been mended and the truck is now in service once more and promises to do some good work yet. The old truck has hauled loads as high as 6800 pounds without a break.

NEW N. A. C. C. MEMBERS.

Companies recently affiliated with the National Automobile Chamber of Commerce, Inc., include the Rainier Motors Corporation, Flushing, L. I.; the American Motor Truck Co., Newark, O., and the Kentucky Wagon Manufacturing Co., Louisville, Ky.



Selden 1½-Ton Truck, Bought from Junk Heap and Repaired for About \$100, Used for More Than a Year by Thomas Rowen, Woonsocket, R. I., an Extremely Profitable Investment.

FROM MANY POINTS OF VIEW

Trucks and Tractors Will Make Farm Operations More Productive

There are two factors holding the farmer back from enjoying the full fruits of his labor, according to C. D. Peet, sales manager of the Napoleon Motors Co., Traverse City, Mich., who has given time and study to this phase of the agricultural industry. The middleman deprives the farmer of his legitimate profit and the horses retard his production.

Unlike most experts, Mr. Peet has a remedy for both these evils. The truck will eliminate the middleman and the tractor will take the place of not one, but a small herd of horses.

By marketing his produce by truck direct to the consumer, or through co-operative associations, the farmer will get the profit due his efforts, will be able to meet city prices for labor and make his farm a paying institution.

With tractors farm work can be done with less help and without such arduous labor. The wide use of power machinery in farm work will make possible cultivation by crews of men who will work on contract, as is done with harvesters who pass from farm to farm.

COSTS MORE TO GET GOODS OUT OF BOSTON THAN ANY OTHER CITY.

John N. Cole, Massachusetts Public Works Commissioner, told the graduates of the Boston Packard school for truck drivers and the winners of the Packard National Efficiency Contest in an address June 19, that the Bay State must spend \$30,000,000 in the next 10 years for rebuilding bridges alone, in addition to many millions for road construction and maintenance in order that the truck may be allowed to play its proper part in the transportation scheme.

Among other interesting statements made by Mr. Cole was one that it costs more to get goods out of Boston than any city in the country. He said Boston handles 55 per cent. of all the wool used in the country and it costs \$800,000 a year to handle it, which sum is ultimately paid by the consumer.

EASTERN IMPORTERS' LIST.

For the benefit of American exporters of agricultural machinery lists of importers and dealers have been compiled in the Far Eastern division of the Bureau of Foreign and Domestic Commerce, Washington, D. C., with respect to the following Far Eastern countries: Dutch East Indies, FE-19,008; Philippine Islands, FE-25,004; Australia, FE-23,012, and New Zealand, FE-24,007. These lists may be obtained by requesting the reference numbers indicated, as may also a list of importers of and dealers in agricultural machinery in India, FE-21,004.

FREQUENT LUBRICATION URGED BY TRUCK COMMITTEE.

The Motor Truck Committee of the National Automobile Chamber of Commerce has inaugurated a campaign for the saving of truck engines by frequent lubrication. A list of slogans has been issued, in which the plea is made that motors be drained and crankcases cleaned every 1000 miles. It is argued that engines properly lubricated wear longer and that new oil diluted with old does not lubricate properly. The committee suggests that members carry a line or slug at the bottom of all advertising, impressing upon owners the importance of cleaning the engine with kerosene and refilling with new oil every 1000 miles or so.

DEALERS' MECHANICS TURN OUT OWN TRUCKS.

The strike at Cincinnati resulted in the sending by dealers of their own mechanics to that city to make their own trucks, which were then driven to their destination.

Value in Warfare of Army Tank Is When Used as Separate Unit

That the tank will be an asset in future warfare only if segregated as a separate entity is maintained by Col. George S. Patton Jr., of the Tank Corps in a recent article in the Infantry Journal, published by the United States Infantry association. He maintains that if the tanks are "grafted on the infantry, cavalry or engineers, they will be like the third leg of a duck—worthless for control, impotent for combat."

Col. Patton, among other things, says: "What better adjunct to a rear guard than a tank holding the reverse slope of some defile until the distant artillery is brought up to dislodge it, and then being forced to witness the safe withdrawal of the tank at 18 miles an hour and covered in an impenetrable pall of its own smoke screen?"

"What more ideal force than tanks and cavalry to cut off and either hold or delay a retreating enemy until the infantry and artillery arrive to finish the work?"

"There is no belief on the part of any tank officer that the tank has replaced in the least degree any one of the existing arms. It is distinctly a new instrument added to the full chorus of the military band. But having appeared, the new pieces, composed by future generals, will demand the peculiar tone of the tank instrument for the proper rendition of their compositions.

"The tank is new and, for the fulfillment of its destiny, it must remain independent. Not desiring or attempting to supplant infantry, cavalry or artillery, it has no appetite to be absorbed by any of them."

Selden Truck Corp. Cited for Assembling First Army 3-Ton Truck

The Selden Truck Corp., Rochester, N. Y., has just received from the War Department a citation awarding the Selden organization the honor of assembling the first government standard 3-ton truck.

The citation reads as follows:

1—"In accordance with the recommendation of the director of purchase, a Certificate of Merit has been sent to you under separate cover.

2—"The citation by the director of purchase is as follows:

"Assembled the first Government standard three-ton truck and manufactured hundreds of the same for the government."

AUTO INDUSTRY IN FIGHT FOR N. Y. NEWSPAPER SPACE.

Representatives of the Automobile Dealers' association, officers of the National Automobile Chamber of Commerce and several automobile, truck and tire manufacturers, will hold a conference some time this month with the newspaper publishers of New York City in an attempt to get a reversal of the recent ruling that the names of no automotive product, manufacturer or dealer be mentioned in automobile copy in the news columns except at show times, when cars will be described. This conference will be far-reaching as other cities are liable to follow New York's example.

It is claimed that the automobile industry—a heavy advertiser—is being discriminated against, while theaters, summer resorts and other institutions engaged in profit making, with activities not so interesting to the public as automobile doings, are given columns of free space.

BUMPER CROPS IN CANADA.

Bumper grain, fruit and vegetable crops are looked for in Canada. Abundant crops are forecasted for the fruit growing districts of Eastern Canada, where there is great anxiety to procure adequate help to get in the harvest.

Western Canada wheat reports are optimistic. Record wheat and oats crops are promised in Ontario, as well as in Quebec and the maritime provinces. Potatoes also are doing well in all sections.

STANDARD TRAFFIC RULES.

The standardization of traffic rules throughout the United States and Canada and the universal adoption of the best safety first measures developed in various cities are the aims of the convention at San Francisco, Aug. 23-27 of the National Traffic Officers' association.

ONLY TRUCKS CAN DO HAULAGE WORK OF \$2,000,000 SCRAP METAL DEALER

THE Perry, Buxton, Doane Co., a \$2,000,000 corporation, dealing in iron and steel scrap, tanks, pipe and rails, with offices at Boston, Philadelphia, New York, Pittsburgh, Hartford and Milan, Italy, and yards at South Boston, Chelsea, Providence, Pawtucket, Worcester and Portland, is called on to juggle anything from a metal shaving to a 60-ton turbine and finds that trucks and trucks alone can meet its hauling demands.

Many of its purchases are made f. o. b. cars and its sales f. o. b. cars, so that the extensive use of trucks are necessary only at its Rhode Island yards. A fleet of Clydesdales does it work at Providence and Pawtucket and does it to the queen's taste. There is only one truck regularly worked at South Boston—a Clydesdale—although trucks are quite often hired for service at South Boston and the neighboring city of Chelsea. The company usually has a few trucks on duty at Worcester and Portland. At the points where offices but no yards are maintained, there is no call for trucks.

The Perry, Buxton, Doane Co. ships by thousands and hundreds of thousands of tons. The United States Steel Co., the Bethlehem Steel Co. and other giant concerns are among its customers. It does everything on a mammoth scale and its use of trucks shows that it operates along modern lines.

Hauls Street Railway.

Within the past year or so its purchases have included a street railway in Worcester, the mechanism and cars of which were dismantled and hauled off in trucks; the purchase from the Blackstone Valley Gas & Electric Co., a Stone & Webster subsidiary at Pawtucket, of two turbines aggregating 125 tons, and other units, two of which were 17 tons and two 16 tons each, these being carted away by trucks attached to low gears, and the buying the other day of a 23,000-pound alligator shear, which was sent from Pawtucket to Providence on a trailer behind two trucks.

So the life of a truck with the Perry, Buxton, Doane Co. is no Sunday school picnic.

The company has two five-ton and one 2½-ton Clydesdale at Providence and two 2½-ton and one 3½-ton Clydesdale at Pawtucket.

Trucks Outclass Horses.

With these trucks work has been done that would not have been possible with horses. The company still has four one-horse teams in Pawtucket for the lighter and shorter hauls. A load of 1600 to 1800 pounds is the limit for these carriers.

For 18 months after the signing of the armistice the 3½-ton Clydesdale on duty in Pawtucket hauled shell forgings continuously from the government shell plant in that city to the freight yard at Darlington a mile and a half away, for shipment outside to be melted for steel purposes.

During the toughest winter New England has known this truck only missed one day and during that 24-hour period not a motor vehicle moved anywhere for miles around. The truck was in condition that day as on all others to do its allotted work, but the elements were too fierce to be braved by man or machine.

During this period the 3½ tonner averaged a load an hour, hauling 56,000 pounds a day. About 20 minutes was allowed for the loading process and the same for unloading, with 10 minutes for the trip each way.

This is but one instance of many in the company's regular routine that shows how the truck outclasses the horse as a hauling medium. The big gain in tonnage and the saving of time through the use of trucks makes the horse entirely impracticable in the operation of this concern.

On the job cited everything was systematized and the 3½-ton truck hauled anywhere from 268,745 to 405,950 pounds in one week. On regular work the week of June 12 this truck's poundage was 201,860. One of the 2½-ton trucks turned in from 115,000 to 145,000 for a week's work and the other kept close to the 135,000 mark.

The company buys from machine shops, nut and bolt factories and other concerns, its purchases later being reclaimed through a melting process. Its material is often located in places impossible for a big wagon or truck to penetrate and because of that fact it must have specially built bodies. These must be short so that they can be turned in a small space. They are either steel or steel lined. Often a load of several tons will hardly reach the top of the sides and will not be discernible to the passerby. Many times, as shown in the accompanying illustration, a load of iron or steel turnings or borings, which weighs not over three tons, will carry the outlines of a load of hay. Dump bodies cannot be used.

After another truck had failed to meet the unusual requirements of the company

the first Clydesdale for use in Pawtucket was bought in February, 1918. Then came another in 1919 and the third this year. The Providence trucks were bought at about the same periods.

The six trucks in use in Rhode Island have met every test and given satisfaction from every standpoint. In addition to multiplying the company's haulage tonnage capacity, they have saved time, proven economical and have headed off the worry over labor which is particularly prevalent at present, due to a decided shortage in this season's crop of teamsters.

TRUCKMEN OF TWIN CITIES IN NEW ORGANIZATION.

The Twin Cities Commercial Carmen's association has been organized for the purpose of developing the trucking business in Minneapolis and St. Paul, establishing an information clearing house for use by all interested in motor transportation and the standardization of service and business methods. Representatives of 22 leading truck concerns of the two cities assisted in the organization. The association voted to support good roads measures and pledged its expert aid in the motorization of delivery conveyances.

The officers are: President, Harry Daffoe; vice president, Carl Will; treasurer, J. A. Donnelly; directors, W. R. Stephens, George E. Holmberg, E. W. Brehm and W. T. Clapp. A secretary to handle service and executive matters will be named later.

NEW "OUTLAW" STRIKE.

A yardmen's strike in Philadelphia, begun June 18, another outbreak of the "outlaw" variety, affected movement of freight on the Pennsylvania and Reading railroads and resulted in embargoes on other roads. This new condition will result in increased freight congestion and, incidentally, will give the truck further chance to demonstrate its utility as a transportation agent.



One of the Fleet of Clydesdale Trucks Operated at the Providence and Pawtucket Yards of the Perry, Buxton & Doane Co., Piled High with a Load of Comparatively Light Steel Shavings.

WHAT THE SERVICE DEPARTMENT EXPECTS OF AND OWES TO THE OWNERS

(By Henry R. Selden, Service Manager, Selden Truck Corp., Rochester, N. Y.)

EVERYONE has patience with an art or an industry in its primitive stages. Many of us can look back with mingled joys and regrets at the difficulties we encountered in the early days of automobiling. Those pioneer days necessarily involved conditions and troubles which always beset the pioneer in any field. Engineers have from that time on vied with each other in continuously producing better types of motor cars and motor trucks. The service department must also accept this challenge and continuously strive to improve its methods in order that it may keep pace with the engineering and other branches of the motor vehicle industry, and only in keeping pace with the other departments does the service branch fulfill its obligations to keep the vehicles continuously on the road.

What may have been considered good service 10 years ago would hardly be considered good service today. What we may consider good service today may not be considered good service five years from now.

Modern Definitions of Service.

The modern definition of service means getting the best possible continuous accomplishment from a motor vehicle, having a due regard for its design, capacity and life. It is obvious that the service department must bend every effort to see that the conditions are carried out which make this possible. There can be no good service without education, and he serves best who helps others serve.

Automotive vehicles are complicated machines, demanding if they are to give the best possible results in the way of carrying capacity and reliability of operation, the attention of some one thoroughly familiar with their lubrication and the adjustments of the various parts.

Experience has clearly shown that the majority of such vehicles are relegated to the scrap heap prematurely, because of abuse and the lack of proper care. The answer to this problem, so that owners may secure the maximum life and continuous operation of their vehicles is service, and the key note of service is education.

Four Classes of Owners' Education.

Education of this kind may be classed under four principal headings:

First: Education of the service department employees so that they will readily visualize the customers' needs and difficulties, enabling them to handle parts orders or other matters promptly and accurately.

Second: Education of the branch managers, dealers and salesmen so that they will not make unreasonable promises when selling the vehicles and supply a type entirely too small or not suited to satisfactorily meet the customer's requirements, nor encourage overloading, excessive speed or lead the owner to ex-

pect that it can operate successfully without a reasonable amount of care and attention.

Third: Education of the purchaser so that he will not expect more than the vehicle can possibly do and thoroughly appreciate the necessity of giving it proper care and attention, showing him also that whatever steps may be taken in this direction will pay large dividends in reduced cost of upkeep and increased reliability.

Fourth: Education of the driver or operator to the facts that proper handling and the correct lubrication of the vehicle for which he is responsible will greatly increase his value of both himself and his employer.

How to Afford This Education.

How best to accomplish this education of the four classes just mentioned is a problem. If we are to fulfill all of our obligations to the owner this problem must be solved and the fact that we are gathered here today, service men with service messages, shows that we are working towards its solution. No service department no matter how well organized, no matter how well trained, no matter how efficient can be considered a panacea for all of the owner's difficulties. There is much educational missionary work to be done and we must all unite to accomplish it.

The truck manufacturer who is actually engaged in selling automotive transportation has assumed certain definite obligations to his customers, which endure throughout the life of the truck. These may be classed as follows:

The Manufacturer's Eight Obligations.

First: To maintain at all times an adequate stock of replacement parts so that orders may be filled promptly and repair work completed with the least possible delay.

Second: To issue necessary parts catalogs and instruction books covering his various models from which material needed for repairs may be ordered intelligently.

Third: To furnish his customers and dealers such technical information in the form of bulletins or service letters as will assist them in maintaining their trucks.

Fourth: To investigate carefully all complaints regarding the performance of trucks and if the owner or his drivers are at fault, to convince them of this condition, or in case the trouble has arisen through a defect in construction, material or design, to take such steps as may be necessary to correct it in the particular case and also to prevent a recurrence of the difficulty.

Fifth: To keep a complete record of all trucks built, including the numbers or other identifying marks on the various units entering into their construction, so that orders for parts can be filled prompt-

ly and accurately, also information to be furnished the owners for insurance or other purposes or the police in cases of theft.

Sixth: To answer promptly all of the numerous questions asked by the customers in connection with the operation or repair of their vehicles and to afford them every possible assistance so that satisfactory results may be obtained.

Seventh: To keep an accurate record of all parts shipped so that executive officials or the engineering department may be advised from time to time how well the various units are standing up in service, as a guide to future designs.

Eighth: To keep a record of new trucks shipped and also to keep track of trucks which have changed hands so far as it may be possible to do so.

Obligations of Dealer and Owner.

I have indicated that there can be no real service without education and this holds true not only in the attitude of the service department towards the owner, but also in the obligations which the owner or dealer owes the factory.

The owner or dealer must realize that his order, inquiry or complaint is but one of the many passing through the service department and should be compiled in a clear and definite manner in order that it can be disposed of with a minimum of delay and the least possibility of error through a misinterpretation of their wants. Probably 20 per cent. of service inquiries and complaints are held up for want of definite and complete information.

Customers and dealers will continually use the name of the owner of the truck without stating either the type or the chassis number and a letter or telegraph inquiry, often involving the loss of three or four days, must be dispatched in order to ascertain the type of vehicle and chassis number.

Customers, garage men or dealers who are unwilling to spend the small amount of time necessary to secure and embody this information in their inquiry or order can hardly expect efficient service.

Service Department Methods.

The service department has certain definite methods for handling different classes of work. Special forms have been prepared for the ordering of repair parts, presentation of claims for adjustment or replacement and for other purposes. The proper use of these forms and the furnishing of complete information in the first instance eliminates the necessity of writing or telegraphing for further details and greatly facilitates the handling of such transactions.

The truck manufacturer and his customers have certain interests in common and the closer they cooperate the better for all concerned. The owner is interested in conserving his investment, getting the most work out of the truck with

the least expense for replacements, and above all a minimum of time lost for repairs. The manufacturer is vitally interested in seeing that the truck gives an efficient performance in every possible way, not only because of the moral obligations attendant on its sale, but also in view of possible future business.

The Service Department's Function.

The service department is the medium of contact between the manufacturer and the owner—it handles all matters following the sale of the truck and the future success of any firm is largely in the hands of its service department.

There is a wide difference between real service and the mere merchandising of repair parts—it is a comparatively simple matter to accumulate a stock of replacements, but to handle them successfully, keep definite quantities on hand in the face of a fluctuating demand, to anticipate the emergency when there is a sudden call for a particular class of material, maintain the various record systems necessary for the conduct of a properly organized service department and above all to keep the owner continuously sold on his trucks, to convince him that the factory at all times has his interests at heart and is only too pleased to do anything within reason for him, is a very different matter. This is in fact the difference between the real service which a manufacturer strives to give and the mere selling of repair parts.

Customers' and Dealers' Cooperation.

The truck manufacturer's service department cannot successfully meet all of these obligations without considerable cooperation from the customers and dealers this involves:

First: That all parts orders be clearly written if possible, including the manufacturer's serial or ordering number for the material needed.

Second: A statement of the type and chassis number of the vehicle for which parts are wanted.

Third: Complete address in cases where the customer only purchases parts occasionally; also full instructions covering the shipping and billing particularly where the shipment is intended for another party, as a dealer ordering repairs shipped direct to an owner.

Fourth: Written confirmations of all telegraph or telephone orders should be mailed the service department as a check on the transmission of the messages.

Fifth: A duplicate copy of the order as entered is mailed the customer and it is his obvious duty to check this over carefully, notifying the service department immediately of any errors or omissions.

Sixth: Material returned to the factory for credit or other purposes should be properly tagged to identify it and a complete statement of all the facts in connection with the transaction mailed to the service department. This includes the owner's name and address, chassis number of truck, reason why parts were removed, length of time in service and, in fact, all necessary details so that the factory may promptly dispose of the affair.

Seventh: Complaints founded either on mechanical or shipping troubles must state all of the facts, as without full and complete information the service department is seriously handicapped in making an investigation, the lack of such information often involving a tedious search of record files at a great expenditure of time and energy, also frequently the necessity of asking for further details.

The Necessity of Good Drivers.

There are two other matters I would like to touch on. A careful appreciation of every one of them is highly desirable on the part of the truck owner. One of these is appreciating the value of good drivers or operators.

The importance of good drivers cannot be over estimated. When operating only one or two trucks it is imperative that the driver be allowed time to properly lubricate the truck, during working hours if possible and if not, that he be paid for overtime spent in this way.

With a fleet of trucks this problem is much simpler, as a man can be assigned to do the necessary lubricating, also replenishing the fuel and water tanks, taking care of the oil lamps or any other routine duties. At the same time another man can attend to minor mechanical repairs and adjustments; this work could be accomplished at night and need not interfere with the daily work of the truck.

Many owners expect that if a driver works eight hours a day the truck will be on the road for a corresponding period and this obliges the operator to make all replenishments of fuel or water and such little lubrication as the truck receives on his running time. This attitude encourages carelessness, as obviously if the owner is not sufficiently interested in his investment to conserve it, the driver likewise will not be much concerned and perhaps feel that those grease cups, those universal joints or the rear axle can go till next week or next month before he lubricates them.

Through long experience the care of horses is thoroughly understood. The driver of a team feeds and waters them at definite intervals and no owner of a span of horses would hire a man who through ignorance or negligence was unwilling to give them this attention. It is just this sort of intelligent care which must be applied to the motor truck if it is to prove satisfactory, operating at a minimum cost with the least possible depreciation.

Good Service with Fair Prices.

The other matter, while strictly speaking a question of sales policy and not within the province of the service department, is so closely related to it that I feel I could hardly close without bringing it up for discussion.

There is at times an all too frequent tendency on the part of some prospective truck owners to beat down the salesman or dealer and obtain motor vehicles at less than standard prices. This attitude on their part is indeed short-sighted and the quicker this practise is eliminated from the whole industry the better for all concerned.

The prospective truck owner who covertly or otherwise undertakes to purchase motor vehicles below their regular prices is placing a high premium on a poor dealer and a low premium on a good one. No dealer can undertake to service motor vehicles unless he makes financial provision to do so and the prospective truck owner who seeks to absorb that portion of the dealer's profit which should be rightly devoted to service is from my viewpoint "killing the goose that lays the service egg."

MORE ACMES IN CLEVELAND.

The city of Cleveland, O., recently added two more 3½-ton Acme trucks to the three already used there by the Board of Public Works for flushing the streets. These trucks are equipped with 1000-gallon flushing units and operate day and night, each displacing four teams and eight men.

UPS AND DOWNS OF DUPLEX.

Two Duplex trucks recently turned in records for navigating in high and low territory. One was operated in Brawley, a town in the Imperial Valley of southern California, which is 119 feet below sea level. Another climbed Lookout Mountain in the Rockies to a height of 7500 feet.

PLANS MOTOR LORRY TRANSPORT SYSTEM FOR IRELAND.

A proposed general strike in Ireland following trouble over the handling of troop and munition trains has caused the British government to make plans for a motor lorry transport system to cover that entire country. It promises as efficient a system of transport as was inaugurated during the railway strike in England.

TO FINANCE TRUCK PURCHASES.

The Penn Securities Corporation, with \$1,000,000 capital, has been formed at Uniontown, Pa., to finance purchasers of and dealers in automobiles and trucks. A similar company was recently formed in Ohio.

HIGH IMPORT DUTY ON TRUCKS TO BE CUT ABROAD SOON.

W. C. Anderson of Bordeaux, who controls Ford distribution in England, France, Denmark and Spain, recently visited the Ford plant at Detroit and declared that the public demand for American cars and trucks abroad will force officials to lift the ban placed on American vehicles through high import duties.

52,000 TRUCKS IN BAY STATE.

At the present rate Massachusetts will have registered by the end of the year 52,000 trucks, against 41,753 last year. Up to June 1 the record of last year had been broken, 42,000 already having registered. Last year at the same time 33,600 trucks were registered.

TRACTOR INDUSTRY ACTIVITIES

Oklahoma Governor Makes Tractor School Big State Event

Governor Robertson of Oklahoma will issue a proclamation calling upon the people of his state to attend the farm power and tractor school to be held in connection with annual farm congress at the Oklahoma A. & M. college, Stillwater, Okla., Aug. 23-28. The governor plans to set a good example by being present in person. There is reason to believe that the attendance will be the largest that ever participated in the exercises.

County commissioners of the state will also be invited to attend a good roads meet to be held in connection with the school. Various kinds of road work, including the construction of some hard surface road, will be shown.

All farm operations will be demonstrated at the tractor school. Farm lighting plants, trucks and all kinds of power equipment will be shown, including power implements of interest to the farm wife. State agricultural authorities are making plans so that any process of farm work asked for can be exemplified. Row crops have been planted at the college and will be available for cultivation during the school.

John A. Whitehurst, president of the state board of agriculture, states that increasing food production will be the theme of the event. The state board and the college authorities are laboring zealously in behalf of the gathering, so that it may attract broad interest and prove a power for good.

NEW BRITAIN MACHINE CO. INCREASES CAPITAL \$5,000,000.

The New Britain Machine Co., New Britain, Conn., maker of the New Britain tractor, has increased its capital from \$2,000,000 to \$7,000,000, of which \$1,000,000 is preferred. Officers have been elected as follows: President, H. H. Pease; vice presidents, A. Buol, S. T. Goss and C. R. Hare; secretary, R. S. Brown; assistant secretary, H. E. Erwin; chairman of board of directors, F. G. Platt.

J. T. TRACTOR CO. EXPANDS.

The J. T. Tractor Co., Cleveland, O., is rapidly expanding and its production of 1000 tractors this year will be materially increased in 1921. Five of its tractors were recently sold in the Philippines. A new warehouse and a new building for the service department are being erected.

ADMIRAL HAY PRESS CO. TO BUILD.

The Admiral Hay Press Co., Kansas City, Mo., will erect factory additions on a tract of land adjoining its present plant which was recently purchased.

RACINE ENGINEERING CO. HAS NOVEL PLAN.

The Racine Engineering Co., Racine, Wis., recently organized by such leading figures as L. N. Burns, A. Y. Dodge and H. L. Taite, all skilled tractor men, will build tractors and tractor parts on a par with motor trucks and motor truck parts of today from the standpoint of design and performance and is ready at all times to render engineering service to tractor and implement manufacturers who are not using its parts as well as those who are. It will build and demonstrate its tractor parts and tractor designs before attempting to interest clients. Offices are at 105 Badger building, Racine, Wis.

CINCINNATI BIG DISTRIBUTING CENTER FOR PERISHABLES.

Cincinnati ranked seventh as a consuming and distributing center for unloads of perishable fruits and vegetables in 1919 according to figures just made public by the Bureau of Markets of the Department of Agriculture. In the four years ending in 1919 that city received and unloaded 20,493 carloads of potatoes, peaches, strawberries and tomatoes. Home grown stock is not included in these figures. As the suburban center of southern Ohio, northern Kentucky and southeastern Indiana and the largest port on the Ohio river, Cincinnati is growing in importance from a marketing standpoint.

TO FIX TRACTOR RATINGS.

The National Implement and Vehicle association has appointed the following committee to work with a committee from the American Society of Agricultural Engineers to arrive at some plan for the uniform rating of tractors: J. A. Secor, E. B. Davis, C. B. Rose, E. A. Johnson and Harry Bates. President Kranich has named the following committee from the A. S. of A. E.: Raymond Olney, A. H. Gilbert, George W. Iverson, J. B. Davidson and E. A. White.

NEW TRACTOR ON MARKET SOON.

The New York Air Brake Co., Watertown, N. Y., manufacturer of the Three Point truck, which attracted attention at the New York show, has completed the first model of a tractor, which will be put through a thorough test and then given a public demonstration. Production will start almost immediately and the new tractor will soon be on the market.

FEDERATION MEETS OCT. 12.

The National Federation of Implement and Vehicle Dealers' association, of which H. J. Dodge, Abilene, Kan., is secretary, will hold its annual convention at the Hotel Sherman, Chicago, Oct. 12-14.

Tractor Dealers Allowed to Make Exhibition at Conventions

The plan of holding tractor shows in conjunction with conventions of dealers' associations has been given the stamp of approval by the National Tractor Demonstration and Show committee of the National Implement & Vehicle association, which had previously frowned on such practises. Retailers' organizations in the Middle West and other points have advocated such exhibits.

Finley P. Mount, chairman of the committee, in announcing the attitude of that body, states that the rescinding order is made with the reservation that the proposed shows to be put on by implement dealers' associations should be submitted to the committee for the approval of the latter as to dates, etc., and with the further qualification that all such proposed shows be free to the public.

Under the former ruling of the committee no tractors or tractor drawn tools could have been exhibited at the conventions. Representatives of various associations appealed to the committee, however, to abrogate this rule, pointing out that such shows, more than any other attraction, contribute to the large attendance on the part of dealers.

RELIABLE TRACTORS GET STRONG CALL FROM ABROAD.

The Reliable Tractor & Engine Co., Portsmouth, O., has found such a strong interest among exporters in its products that its catalogues and advertising matter is being printed in foreign languages. French and Spanish will be included in the first issue. Its foreign representatives report increasing demands for two-plow medium priced tractors of the Reliable type.

AGRIMOTOR CO. SUCCEEDS WICHITA TRACTOR CO.

The Wichita Tractor Co., Wichita, Kan., has been reorganized and has been incorporated with a capital of \$1,250,000 under the name of the Agrimotor Co. The company will also produce road graders in a new plant to be erected. Officers of the new corporation are: President, C. W. Levis; vice president, W. R. Rush; secretary, A. F. Weber; treasurer, J. M. Reynolds.

EXPANDS DOYLESTOWN PLANT.

The General Motors Corp., is said to be contemplating the expenditure of \$1,000,000 in expanding the Doylestown Agricultural Works, Doylestown, Pa., which it recently purchased. All additions are due to be completed within two years. Motor trucks and farm machinery are to be produced.

WOONSOCKET LIGHT TRUCK ALL-STEEL DUMPING BODIES

SPECIALIZED production of end-discharging and elevating bodies for small chassis has been a decided success with the Woonsocket Wagon Manufacturing Co., Woonsocket, R. I., a concern widely known in the power ve-



End-Discharge Body for Any Chassis of One-Ton Rating.

hicle industry. Many body builders have developed special designs and these have been standardized whenever there was seemingly reason to believe they would be generally demanded, but no concern has as yet produced the types built by the Woonsocket concern.

Broadly applied the general belief of those who require haulage is that power trucks are preferable to any other type of vehicle, but a majority of those engaged in contract trucking believe that for short hauls animal vehicles are more productive, because the value of lost time is less.

Logically the ideal load from the viewpoint of the truckman is as large as can be hauled, for this insures the largest productivity, provided that the time required for loading and unloading does not offset this productiveness. But unless the load is to capacity the full value of the truck as a haulage vehicle is not realized.

Economy Chiefly in Greater Speed.

The use of power trucks for the haulage of loads of comparatively little value, such as coal, sand, gravel, broken stone, etc., is chiefly their greater speed as compared with animals, and the economy is generally in ratio to the provision made for loading and unloading. As a rule loads hauled by vehicles will range from one to two tons. Obviously the large ve-

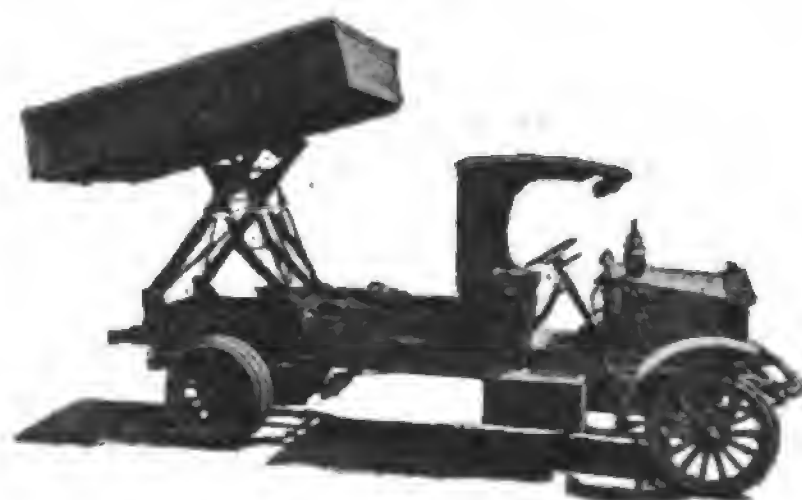
hicle will move slower than the small. A problem with many contracting truck men is to determine whether they can best operate the faster or slower machines.

Experience has proven, seemingly very conclusively, that the small truck that is equipped for quick unloading, which can be loaded rapidly, can be made productive even when the loads are no larger than those hauled by animal vehicles, and this belief has created a demand, constantly increasing, for equipment that can be installed on small chassis.

Some contractors are now equipping one, 1½ and two-ton chassis with end-discharge bodies, and these are made productive in hauling from one to three yards loads of building material, excavating earth, etc., when they can be loaded rapidly and the work is so planned that they can be unloaded by dumping.

Small End-Dump Truck Bodies.

The Woonsocket Wagon Manufacturing Co. is producing a series of bodies that are designed for installation on chassis



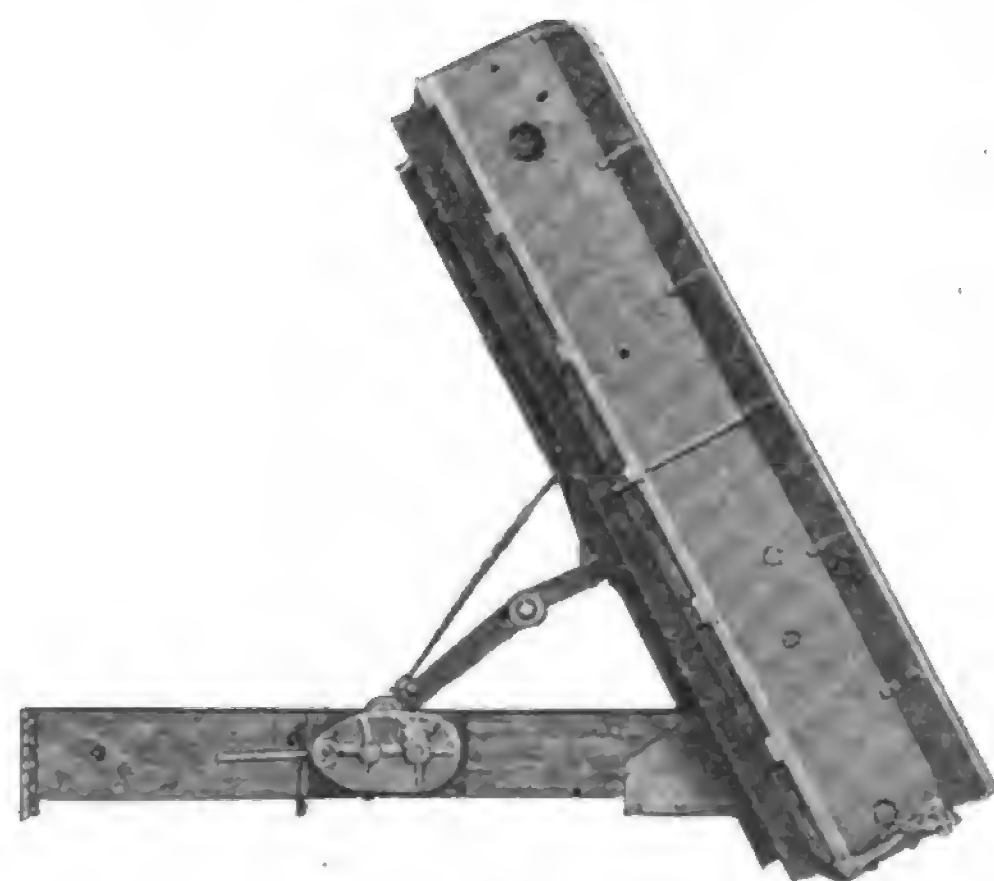
One-Ton End-Discharge Body with Elevating Equipment.

having load ratings of from one to two tons, these being steel or wood, equipped with power or manual hoists, that may be either end-discharging, or end-discharging and elevating, the latter type being desirable when the loads are to be carried through chutes.

The Woonsocket specialized bodies afford owners of small trucks the same facilities obtainable with larger machines at prices that are not prohibitive, and which can be regarded as dependable, enduring equipment. These bodies are seven feet long, four feet six inches wide and 12 inches deep, with four-inch wings or flareboards, having capacity for 38 cubic feet, or slightly less than 1½ cubic yards. They are built of No. 14 sheet steel, hot riveted, with a sub-frame of three by three-inch channel section of 5/16-inch stock, riveted to the bottom and attached to the hoist. The tailboard is hinged from the top with a latch at the side. The hoist is a ¾-inch lap-welded chain and the hoist is a Kellgren, a patent controlled by this company. The body complete weighs approximately 600 pounds.

Kellgren Manually Operated Hoist.

The Kellgren hoist is operated by hand with a crank at the left side, by a train of gears that actuates a series of arms. The body for end-discharge can be elevated to 50 degrees if desired, this in-

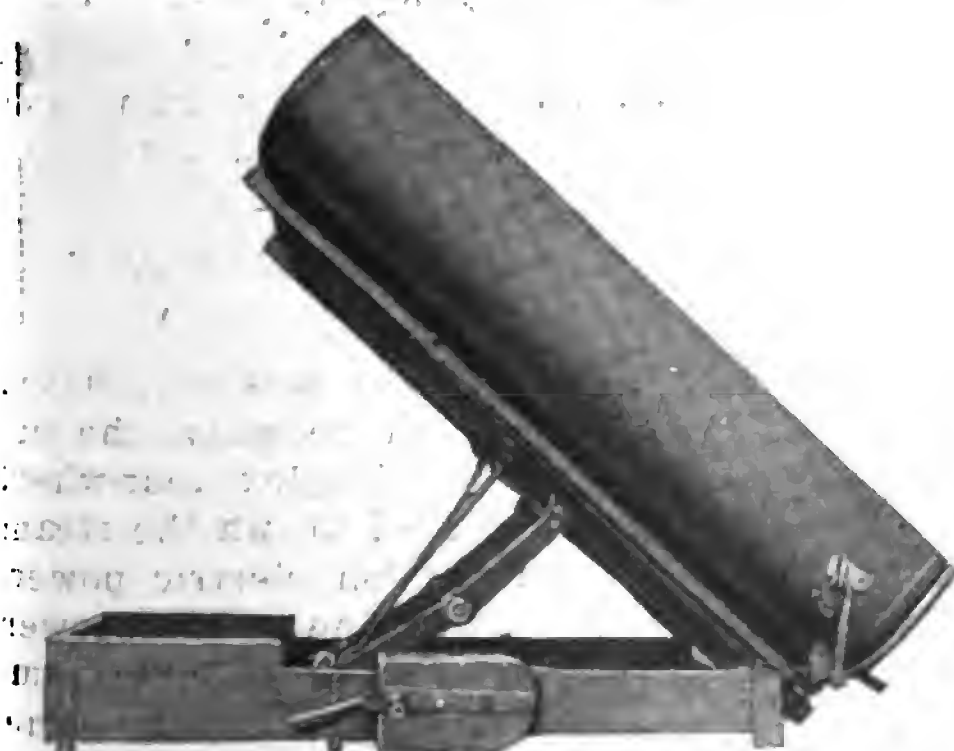


Wood Body, 1, 1½ and 2 Tons Capacity, but Only End-Discharging.

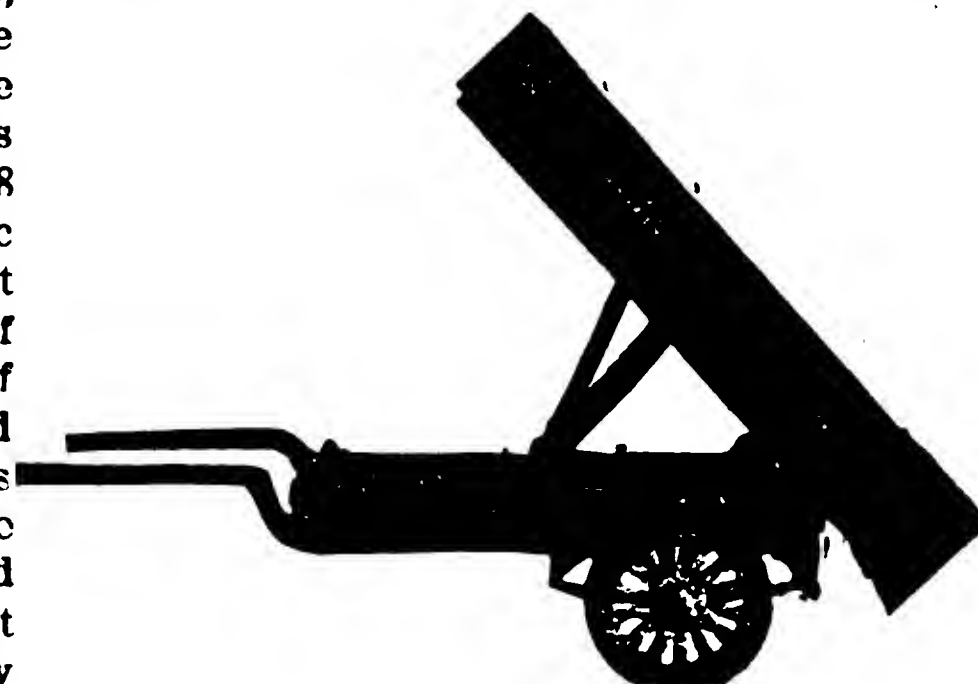
clination being sufficient to insure discharge of any material by gravity, while for complete elevation the rear end of the body may be raised five feet above the ground, so that the load may be carried through a chute over a fence or across a lawn, the distance being limited by the movement of the material through the chute. The chute is carried telescoped under the body between the hoisting arms.

Another type body is built for 1½-ton chassis the same length and width, but 16 inches deep, and for two-ton chassis eight feet length, four feet six inches width and 18 inches deep. All of these may be obtained without the elevating equipment. They are intended for use by contractors or by municipalities, or, in fact, any service where dumping body trucks are used instead of animal tip carts.

Another type is built with a solid wing to reduce the height of the center of gravity of the same length and width, with 12-inch sides and four-inch wings for the ton size chassis, 13 inches height and four-inch wings for the 1½-ton size, and eight feet length, four feet six inches width and 15 inches deep with five-inch wings for the two-ton chassis. These are



Steel Body, 1, 1½ and 2 Tons Capacity, End-Discharging and Elevating.



Steel Semi-Trailer End-Discharge Bodies of 3, 4, 5, 6 and 10 Tons Rating.

both end-discharging and elevating.

Still another type is built with rounded sides and without wings and another type is constructed of oak for farm and general work, with end discharge equipment only. These bodies are constructed with flareboards.

Large and Semi-Trailer Bodies.

The company also builds steel bodies, both end-discharging and elevating, for two, 2½ and three-ton chassis, which have 66, 81 and 100 cubic feet capacities, that are operated by both manual and power hoists, and all-steel manually-hoisted dumping bodies for semi-trailers, the bodies having either round or square corners. The semi-trailers are constructed for use with any type of fifth wheel or tractor, and with tailgates hinged both for top and bottom opening.

The semi-trailers are constructed with heavy wood wheels and solid tires, high quality springs and oil-tempered axles equipped with roller bearings.

The company builds all types of special bodies to specification, its present production being 50 bodies a week, which will be increased to 100 a week about Aug. 1, and the number of employees increased from 85 to 150. Now the output is about the same number of truck and passenger car bodies weekly, but the ratio will be about 35 per cent. of the former and 65 per cent. of the latter. The company now has orders booked for 3000 bodies. One recent delivery was 40 end-discharge bodies and hoists for truck chassis owned by the State of Rhode Island, which will be used by the state highway department for road building.

Plant Large and Well Equipped.

The main plant in Worrall street is reinforced concrete, 275 by 75 feet, three stories, the second floor being occupied by the Simplex Tool Co., manufacturer of tools, gauges, fixtures, etc., with which the company interests are identified. The mill work is done on the first floor and

the top floor is given over to assembly, upholstering and painting. The present drop forging plant has 3500 square feet of floor space, but a steel building, 150 by 75 feet, is shortly to be built, in which 25 forges will be installed.

Engineering and Production Staff.

The company was incorporated in 1901. F. B. Cleveland, general manager and treasurer, and Harold A. Cleveland, works superintendent, have been associated with the company since 1909 and 1916 respectively, both being graduated from the Worcester Polytechnic Institute as mechanical engineers. E. H. Francis, assistant superintendent and production manager, also a Worcester Tech graduate, was formerly production and estimating engineer for the Buffalo Forge & Blower Co., and E. A. Ballou, designer and estimator, was with the Taft-Pierce Manufacturing Co., and the Price-Campbell Cotton Picker Co. before engaging with the company four years ago.

SNOW MELTER, SUCCESSFUL IN EUROPE, PATENTED HERE.

The Fennia snow melter, invented and manufactured in Finland and now used in Finland, Scandinavia and Russia, has been patented in the United States and Canada. The melting capacity of the machine is 26 or more cubic yards per hour, depending upon the size of the machine and the kind of fuel used. Cheap fuel, such as wood, coke, coal, kerosene and crude oil may be used. The smallest apparatus, weighing 500 pounds and requiring four men to keep it supplied with snow and fuel, uses, when fired with coke, 200 pounds of fuel and melts 32 cubic yards of snow per hour. The machine utilizes 90 per cent. of the heat developed.

The apparatus consists of an iron furnace, water jacketed all around; a snow receiver, or hopper, surrounding the upper part of the furnace; a system of ducts by means of which the water from the melting snow is again forced into the snow, thus increasing the melting; a high-pressure fan driven by a small electric motor for creating a strong artificial draft and driving the heat developed out through the snow. The cooling of the furnace walls is accomplished by leading the snow water through the water jacket, from which it is forced out again through jets into the snow.

The apparatus melts snow and ice. The dirt and gravel in the snow is automatically separated from the water outside the machine to avoid clogging drains or gutters.

The machine is used in Finland by street cleaning departments, banks, public buildings, large business houses and property owners. The use of this machine reduces the cost of removing snow from streets in Helsingfors about 60 per cent.

The Motor Truck Division of the National Automobile Chamber of Commerce is planning to repeat the successful rural motor express exhibits of last year at state fairs in New York, Pennsylvania, Vermont and Virginia.

Transportation Engineering Is Standard College Course

The Transportation Engineering committee of the Electric Vehicle Section of the National Electric Light association, made public at the recent annual convention at Pasadena, Cal., the summary of a survey made concerning the offering of courses on transportation engineering in the colleges of the country. It shows that nearly 40 per cent. are now giving such courses. More than four per cent. introduce elements of transportation into other courses of an engineering nature.

SYRACUSE DEALERS ORGANIZE.

The Syracuse, N. Y., truck dealers who took part in a six-day tour through the adjoining farming district the latter part of May followed up their good work by organizing a permanent body to be known as the Syracuse Motor Truck Dealers' association. Its aims include the correction of trade abuses and the promotion of highway transportation, good roads and proper legislation. Another tour will be held in the spring.

The officers are: President, C. W. Darling; vice president, H. Bancroft White; secretary and treasurer, John Barzee.

TELEPHONE COMPANY BUYS 1000 WINTER TRUCKS.

The Winther Motor Truck Co., Kenosha, Wis., has closed a contract with the American Telephone Co. for the delivery within 16 months of 1000 of its four-wheel drive type trucks. The Winthers will be employed in the field work of the company.

FINES FOR OVERLOADING IN NEW JERSEY.

New Jersey claims that overloaded trucks are excessively wearing its highways and is holding up drivers and imposing fines in cases where the vehicles are overloaded.

WESTERN CANADA FINE MARKET FOR TRACTORS IN 1919.

Western Canada proved a fine market for tractors in 1919, according to the report of Consul General J. I. Brittain, Winnipeg, Manitoba. It shows that sales were made by 53 farm tractor manufacturers. One firm sold over 1000 of the 8844 tractors disposed of during the year in the Provinces of Manitoba, Saskatchewan and Alberta. There were also sold in that territory 104 steam traction engines.

At present there are owned in the three provinces approximately 25,000 tractors; 7500 were purchased in 1918 and about 5000 in 1917. It is estimated that about 10,000 tractors will be sold during the year 1920. In 1919 there was invested in tractors about \$14,500,000, and there will be about \$17,500,000 invested in 1920. Generally speaking, the tractors sold comprise five classes. There was sold in 1919, as near as can be ascertained, the following of the various classes: 8 to 16 to 10 to 30 horsepower, 4791; 14 to 25 to 16 to 30 horsepower, 2011; 11 to 22 to 12 to 25 horsepower, 1487; 17 to 34 to 20 to 40 horsepower, 374; 22 to 45 horsepower and over, 181; steam traction engines, 104.

Until about four years ago gasoline was used almost entirely; now it is used principally to start the tractors and kerosene or distillate is used as a fuel. The difference between the price of gasoline and kerosene is about 12 cents a gallon. Distillate is cheaper than gasoline but more expensive than kerosene.

DUPLEX TRUCKS RUN PLANT.

The Duplex Truck Co. was not phased when its coal ran out recently, the engines of eight big Duplex four-wheel drive trucks being used to run the steam power plant and furnish electric power. They did the work of the 50-horsepower electric motors and every Duplex employee was kept on the job. At the same time the new trucks were tested out with a saving of gas.

CONSTANT WORK AND HEAVY HAULS

Earns Double Revenue by Contract for Street Cleaning

Nights

J. FRANK CRONIN, 298 Wickenden street, Providence, R. I., figures that trucks were made to use and he works his night and day.

Two International two-ton trucks and one Republic one-tonner do general hauling throughout the day and then the three vehicles put in eight hours at night for the city of Providence before they can call it a day.

Up to recently Mr. Cronin used the two larger trucks, with two one-horse carts and two horses attached to a sprinkler. The work has been getting beyond the capacity of his equipment and the other night he retired the two single carts and put the one-ton truck on the job, the latter doing so much more than the two teams that the extra requirements were cared for. He plans at an early day to put the sprinkler on a chassis, the final link in complete motorization.

The three trucks work while the populace sleeps. The streets of Providence are thoroughly swept and cleaned during the night and the native comes down town in the morning wondering how the untidy highways of the day before were transformed overnight. J. Frank Cronin and his three trusty trucks did it.

An average of 27 men are employed in this nightly task. The hoers, shovelers and sweepers mass the debris in piles and then the trucks come along and cart the refuse away to various dumping grounds. Piles are as close as six feet so that the motors are never stilled, the trucks continually stopping and starting. Despite this big drain on the fuel supply Mr. Cronin's weekly bill for gasoline and oil for his night and day trucks averages only about \$50.

At present something like 25 tons of refuse is removed from the streets of Providence nightly. After a windstorm

this amount has often been vastly increased and instead of the usual work schedule the trucks are kept on the job as long as 12 hours. They never complain nor never strike.

Much of the day hauling by these trucks is done along the water front. At an early day Mr. Cronin anticipates that one contract, which will call for the daily delivery to freight cars of great quantities of chicken feed manufactured from oyster shells will keep all his trucks constantly on this one job. The night work will go on just the same, this being done under a yearly contract with the city.

"THE HIGHWAY FREIGHTER" IS SLOGAN FOR INDIANA TRUCKS.

The Indiana Truck Corporation, Marion, Ind., has adopted a new slogan for its product. All selling and distributing agencies will hereafter herald the Indiana truck as "The Highway Freighter."

This slogan was selected as the outcome of a contest in which nearly 1700 persons in 34 states and the Dominion of Canada took part. Two handsome gold watches, a rifle and a desk clock were given as awards.

The name that sticks was picked by R. F. Crom of Drefs, Cumings & Drefs, efficiency engineers, Detroit, Mich.

Dealers and distributors of Indiana trucks everywhere have been urged to put this slogan in general circulation as indicative of what the Indiana trucks are built to do.

FIREMEN BUILD OWN TRUCK.

The city of Lawrence, Mass., modern and up-to-date except as to its fire department, was recently put to shame by the action of members of the fire department who recently built the first piece of motor fire apparatus in use in that city. The cost to the city was \$400, a citizen donating the chassis and the firemen doing the rest. The department already possessed most of the "fixtures."

Trucks with Special Rigs Haul Machinery in Record

Time

Seymour & Hunt Co., Inc., 169 Canal street, Providence, with a fleet of two Packards, one Pierce-Arrow and a Vim, specializes in hauling boilers and heavy machinery, recently carried two loads of record volume.

One of these was an alligator shear purchased by the Perry, Buxton, Doane Co., dealer in steel and iron scrap, that was transported from the plant of the Champion Horseshoe Co., Pawtucket, to the yards of the former company in Providence, a distance of four miles.

The other job was the hauling of a 19½-ton planer from the Providence freight yard to the Textile Finishing Machinery Co.'s factory in that city, a distance of one mile.

After the shear was stripped of enough auxiliaries to fill two five-ton trucks it weighed 38,900 pounds. This huge machine was placed on a low gear and hauled the four miles by two trucks, a five-ton Pierce-Arrow in front and a five-ton Packard next the low gear. The heavy load was hauled on several hills with comparative ease.

The same Pierce-Arrow truck alone hauled the big 19-ton planer on a low gear a mile through the streets of Providence.

TO FIGHT INCREASE IN PRICE OF MATERIALS.

A hundred purchasing managers of the National Automobile Chamber of Commerce met last month and went on record against any advance in price of automotive materials on the ground that the present conditions do not warrant such increases which would cause auto and truck prices to go up and tend to destroy the vast business built on big production at present prices.



Pierce-Arrow and Packard Team of Trucks and "Low Gear" Trailer Carrying an Alligator Shear Weighing Nearly 20 Tons That Was Delivered at the Plant of a Scrap Metal Dealer Four Miles Distant.

Return Load Rates Mean Success for Long Distance Trucking

Cost Can Be Brought Within Reach of Shippers When They Pay for But One Way—Bradbury L. Barnes Has Hit a Bullseye by Operating to This Plan



Two of the Fleet of Five-Ton Packard Trucks Operated by the Transportation Co. of Providence, Positioned to Afford Quick Loading at Cars in a New Haven Freight Yard, Insuring Least Labor Cost and Vehicle Waiting.

THE successful man always has the floor. That is why we present to our big reading circle Bradbury L. Barnes of Providence.

The credentials committee has looked up the papers in his case and finds that Mr. Barnes began his trucking career eight months ago with one truck. Now he has six big highway haulers swinging into action daily. The committee therefore greets the candidate and escorts him to the chamber of success.

As Mr. Barnes is not content to live in either the past or present, but is a builder for tomorrow, a forecast as to the volume of his truck equipage eight months onward would be daring and presumptuous.

Naturally Mr. Barnes has ideas. A 500 per cent. increase in business in less than three-quarters of a year argues it and admits it in the same breath. He was a neophyte in the industry a few days ago and all he has to offer in the way of forward thought is founded on his own personal encounters with the problems that the truck man meets in his day's work. His views should be and are both original and interesting.

Sit up closer, fellows, because Mr. Barnes says a mouthful!

The Providence man, who is manager of the Transportation Company of that city, has reached the heart of the problem in his declaration that the success of the long haul trucking business depends entirely on the full development of the return load movement.

Advocates Long Hauls.

He maintains that long distance trucking will never have a chance in the haulage stakes until the truckman can give his customer rates based on a return load. At the same time Mr. Barnes is a stout advocate of the truck as a medium for hauling freight big distances.

The trucks directed by Mr. Barnes make frequent trips from Providence to "near" New York city. The "near" is the point where the avenue of failure ends and the road to success begins.

Shippers who have merchandise to send from Providence direct to New York city gain little or nothing by hiring trucks. The financial outlay is considerably greater than for freightage by rail or water.

The fellow who does get results is the manufacturer or merchant who is billing his goods to points just outside the metropolis. It does not matter which side of New York the consignee inhabits, granting of course, that he does not reside where the Statue of Liberty holds sway. If he lives in Westchester county or any part of the southern end of the state, if he lives in the northern end of New Jersey or in the western end of Connecticut he wins when he ships by truck.

Direct Delivery Counts.

The gain comes in direct delivery to the door of the consignee without added cost. An important advantage along this line is the fact that the nuisance and delays incident to coping with the conges-

tion at the New York city piers and railroad freight terminals is avoided. Speed is accomplished and labor saved, while the expense is but slightly enhanced, if at all greater than the cost of shipping by boat or freight car, plus the cost of getting the goods from the metropolitan terminal to the person for whom they are intended.

For instance, a Providence concern which has been sending barreled material by boat, the cheapest of all transportation agencies, to New York city en route to a smelting works at Irvington, a suburb of Newark, N. J., faced a cost of from \$3 to \$5 a barrel for getting its product from New York to Irvington and immediately contracted with Mr. Barnes to deliver direct from Providence to Irvington by truck, the aggregate costs being about the same, with tons of time saved.

A Business Getter.

The Transportation Company manager is constantly on the watch for manufacturers who are shipping to points just off the beaten path. He does not wait for business to come trooping up the steps to his headquarters on the second floor at 44 Washington street. He goes down the stairs and out into the highways and byways hunting his quarry. He is a business getter and what he gets sticks, thanks to the efficient service rendered.

Mr. Barnes is in the field for long distance trucking even at the expense of his short haul business. He sees to it that he can quote return load prices to his

patrons and this means that he can do work quicker, better and almost as cheap as the carriers by water and rail.

Mr. Barnes has made up his mind that return load bureaus and similar agencies cannot solve the problem of the individual truckman and is not depending upon outsiders to keep his vehicles moving. He realizes that the outgoing and the incoming load must dovetail as to time and places and that if he is to get the right kind of return load at the right hour he must do the job his little own self.

Has Return Loads Agent.

Under his direction the Transportation Company has a man at present engaged in the sole task of interviewing manufacturers as to deliveries from outside points. This solicitor has won wonderful success and gradually but surely Mr. Barnes is building a permanent future business through the aid of his own privately conducted return loads bureau.

By mingling with his fellow men the Providence trucking manager runs into orders for return loads daily. When a MOTOR TRUCK representative trapped this busy person in a corner of his office the other day he had three bookings for return loads that came in this way. Two were for furniture, one from Paterson, N. J., and the other from Cohoes, N. Y. A third was for farm utensils from New Foundland, N. J.

While dealing with the return load proposition the writer believes large returns would result from the establishment of a return load agency, operating in the cities of Boston, Providence, New York and Philadelphia.

Private Return Load Agency.

With an office in each of these cities, all in charge of live-wire transportation men, a business could be developed which would be a boon to men engaged in the trucking industry, as well as very productive to the promoters of the plan. Truckmen have willingly paid commissions as high as 20 per cent. for return loads. Judicious advertising and proper solicitation would bring to such a concern a business that would pay Ford dividends, or those who have considered the project have slipped a cog. There is a big field for an enterprise of this class and the early bird naturally gets all the accretions in sight.

Where the return load bureaus wait for business to drift in the man whose livelihood depends on securing return loads would go seeking what he was after. It would not be long before the manufacturers and other big shippers in every city where an office was located, as well as in the surrounding territory, would be educated as to what to do when they had goods due from outside that must be hurried. In this way the shipper and the truckman would be brought together for the best interests of both.

One Driver System.

Mr. Barnes only assigns one driver to each truck, his reasons being safety and economy. The fooling and talking which is inevitable when two men are on a truck, which so often takes the attention of the driver from the wheel and brings fatal accidents, is avoided by the one-man

system. The pay of an extra man, amounting to at least \$1500 per year for each truck, a total of nearly \$10,000 a year, is saved. A saving of \$10,000 a year is worth while, even in the trucking business.

Mr. Barnes has practically all ex-service men in the cabs of his trucks. He uses them well and pays them well and gets 100 per cent. service for his outlay of cash and good fellowship. He is in touch with his drivers at all times. He knows their working conditions and helps to improve them. He is intimate with every detail of the mechanism of each vehicle and with all the ramifications that enter the daily routine of his drivers.

When a truck is stalled Mr. Barnes is first notified and he is the first repair man to get to the scene whether the truck is held up in Rhode Island, Connecticut, New York or Pennsylvania, providing, of course, that the break is serious or the barrier against continued movement important.

In Touch with Drivers.

This spring he spent days around Clinton, Conn., when three of his trucks were stalled up to their hubs in mud. The Barnes vehicles were not alone in their trouble, there being scores of other machines tied up in the heavy footing. The Providence man remained with his trucks until all were free and on their way.

Little difficulty has been found with the loading and unloading conditions due to the single-manned trucks. Many mills are anxious to get their stuff in or out in a hurry and are ready and anxious to do their own loading and unloading. In other cases an extra man or two has been hired without great inconvenience. The only points at which the one-man idea has proven a handicap have been at piers and other terminals where foremen and sub-foremen have demanded graft for providing helpers to get on or take off a load.

Has Six Big Packards.

The Barnes fleet comprises three five-ton and three 3½-ton Packards. These six trucks do an immense volume of hauling weekly. No job has yet been too big or too small to undertake. The concern recently carried two saddle horses from Boston to Keene, N. H. The truck used had a rack body with especially constructed stalls and the horses reached their destination as fresh and skittish as when leaving Providence. From the town of New Foundland, near Paterson, N. J., one horse was recently transported to East Greenwich, Conn. The rack body truck and a special stall was used. The horse was not injured in the slightest by the trip.

Much of the Barnes hauling is done for Providence refiners, with connections in New York state and New Jersey. Every Tuesday noon at least one truck leaves Providence for Newark, N. J. The pilot drives all night, reaching the New Jersey city in exactly 24 hours, stops being made only for gasoline and meals. The return load is taken on Wednesday afternoon and the driver divides his time between sleeping and trimming up his

truck until Thursday noon, when he pulls another all-night drive, reaching Providence Friday noon. Frequently the Providence shipper has the check in payment for the goods before the driver gets back, which is doing business along 20th century lines.

Answers Call for Speed.

The Packards are also used frequently in carrying wool to and from points around New York city. Hudson and Stuttsville, N. Y., Grassela and Newark, N. J., are points where they haul to and from at regular intervals. They are not averse to tackling a job which requires unusual speed.

When a boiler went out of commission at the plant of the Contrezeville Manufacturing Co., Manville, R. I., recently, a 3½-ton Packard made the trip each way to and from Bayonne, N. J., to Manville, which is 12 miles north of Providence, in 17¼ hours, no outgoing load being carried and the truck bringing back boiler part on the return trip. Because of the necessity for getting this engine back in shape in a rush so that the factory could continue operation stops were not made on this trip even for gasoline, a big supply of fuel being carried in cans.

Sticks to Solid Tires.

Mr. Barnes has operated his trucks on solid tires to date with satisfactory results and as yet sees no reason why he should change to the costlier pneumatics. In this respect he calls attention to the rough roads over which the trucks are driven in mill hauling and the consequent abuse of tires. The other day one of his trucks was worked hauling in a factory yard which was inches thick at many places with broken glass. He contends that the casing on pneumatic tires would have been quickly lost on this particular job.

Ship-by-Truck Terminal.

Mr. Barnes is one of the pioneers in a rapidly advancing movement for a ship-by-truck terminal in Providence. This convenience for shippers and trucking concerns will be a reality within a year Mr. Barnes foresees. If he puts the same energy and vision into his efforts for this institution he has expended in growing six trucks for the Transportation Company where one grew before, the terminal will be an actuality long before that time.

CATERPILLARS IN CHILE.

A small but new and growing market for tractors is reported in the district around Concepcion, Chile. The use of tracklaying tractors is also suggested for the logging districts of the south by Consul McDonough. It is almost impossible to get out the logs during a large part of the year, rains often continuing for nine months in the lumbering district of Valdivia. It has been urged that track laying tractors would meet this condition.

AUSTON SALES MANAGER.

The Mangles-Kirby Co., distributors of Republic and Maxwell trucks at Jacksonville, Fla., has engaged A. E. Auston, well known to the southern trade, as sales manager.

INTERNATIONAL TO BUILD WORLD'S LARGEST TRUCK PLANT AT FORT WAYNE

THE International Harvester Co. is to set the pace toward an era of still greater expansion for the power truck industry and to that end has secured a site on which will be built the largest truck plant in the world.

This has been made necessary by an increase in sales volume of 1500 per cent. in International trucks during the past half dozen years. The new factory will be equipped to meet the demand in this country and throughout the world for International trucks.

Cyrus McCormick, Jr., works manager, who will have charge of the construction, equipment and operation of this new development, says:

"The site of the new plant, which will be in addition to Akron works, is situated at Fort Wayne, Ind., about 3½ hours ride from Chicago and on the N. Y. C. & St. L., Wabash, Pennsylvania, New York Central and Ohio electric railroads. The facilities for International motor truck manufacture and distribution were investigated of 28 industrial centers in the United States before the Fort Wayne site was selected, to find the very best base for International motor truck extension. In a word Fort Wayne was selected for its strategic situation with respect to the delivery of raw materials from the company's mining and lumber and steel producing properties and from available sources of purchase and with respect to the quick and facile distribution of the finished product.

"Fort Wayne's position is favorable geographically and its railroads and their connections are the most completely supplied with that special equipment which is needed for delivering International motor trucks to the company's dealers and distributors the country over and to the 107 International Harvester branch houses in the United States and Canada.

Will Construct an Ideal Plant.

"Best of all, the spirit of Fort Wayne and the cooperation of her people and organizations are most favorable to the development of the largest and most pro-

ductive motor truck plant in the world. A truly great factory must consist not only of adequate buildings and equipment, employees and pay roll, but must furnish also a proper environment of homes, institutions and people.

"That special study was given this often overlooked fact is shown by the carefully developed arrangement between the Harvester company and the Fort Wayne Chamber of Commerce for the completion, as the first quota, of 1000 new homes for International Harvester men and their families. These homes will not be concentrated in an industrial home center, but will be distributed among a number of attractive suburbs. The plan is that these groups of homes in their various locations will each become the nucleus of a suburban community which will attract in a normal way residents from various walks of life and such commercial facilities as are normally needed in the life of a residence community. The houses will not be constructed along lines of monotonous regularity, but will be diversified as to plan and style of architecture. As a safety measure, all plans must be approved both by the company and the Fort Wayne organization which has the construction in charge. The homes will be sold to employees at actual cost plus 10 per cent. on the amount of investment.

"This elaborate programme was entered upon and its vast detail mastered in the belief that a well housed employee is a happy workman and that happy workmen are the ones who build the nation's master products. Workmanship of the quality and perfection necessary to maintain the standards of International motor truck manufacture is incompatible with anything but the most comfortable and wholesome conditions of home life.

Will Be the Largest in the World.

"It is a noteworthy fact that the site purchased for this great new plant comprises 140 acres of land and that this represents the greatest acreage for manufacturing purposes of any of the Inter-

national Harvester plants on the American continent, of which this will be the 24th, or of the European plants of the company, which are seven in number. This fact shows the seriousness with which the company is entering upon its motor truck enlargement plan and the elaborate scale upon which it is building for the future.

"The buildings of the new plant will embody the improvements of every important modern automobile and motor truck plant in the United States. The company plans frankly to take advantage of other peoples' experience in building for manufacture on a large scale and to combine this with its own experience covering many years. It is the determination to combine all noteworthy individual merits of America's successful manufacturing establishments into this super-truck-plant in order to make it as nearly perfect as practical and scientific ingenuity can devise. Health and comfort of the workers and ease efficiency and perfection of work will be the major end involved. The machinery and equipment will follow the same principle and no expense or pains will be spared to equip the great plant for the happiest and most satisfied workmen and for making the best and most economical motor truck which can be built.

"In fact, the plans which the company has been formulating ever since the International motor truck first began to demonstrate its popularity is to continue to be able to deliver the best motor truck made regardless of price, and to have the product priced in accordance with honesty and economy of manufacture. The company's largest manufacturing property and the world's largest motor truck plant has been planned every step of the way with these ends unswervingly in command. The company recognizes its duty to its dealer and distributor organization and to commercial and agricultural America, and it is that duty which has demanded this unprecedented enlargement in its motor truck campaign."

TRACTORS GO BIG IN CANADA.

J. I. Brittain, United States consul-general at Winnipeg, reports that 53 manufacturing firms sold 8884 farm tractors and 104 steam traction engines in Manitoba, Saskatchewan and Alberta in 1919. Of 25,000 tractors now owned by farmers in the three provinces, 7500 were purchased in 1918 and 5000 in 1917. Mr. Brittain estimates that 10,000 tractors will be bought by farmers this year. In 1919 \$14,500,000 was invested in tractors, and in 1920, he estimates, \$17,500,000 will be invested. One firm last year sold 1000 tractors in western Canada.

A group of six farmers in a community on the Canadian National Railway a few years ago owned 60 horses. The same six farmers today own 24 horses, or an average of four apiece. They have sold

off the other horses and supplanted them with farm tractors. This proportionate decrease in farm work horses, it is said, holds good in many other communities. Tractors, the farmers say, do more work and do it more rapidly than horses, and cost considerably less to operate than horses cost to feed.

126 TRUCKS IN BURMA.

A total of 126 motor trucks, lorries and buses are used in Burma, India. The trucks and lorries are employed in the wolfram and tin mines and rubber estates, in the oil fields, in the region of the ruby mines at Magok, for trucking in the city of Rangoon and for transport from railway stations to sea or river ports. Most of them are of American origin.

400 GMC PLANT VISITORS.

A party of 400, officials and employees of the Peace Automobile Co., Minneapolis, distributor of GMC trucks, recently visited the General Motors Truck plant at Pontiac, Mich. The same company handles the Buick and a trip was also made to that factory at Flint. The party traveled in style by special train and steamer and nearly a week was consumed in the trip.

PRODUCE TO CITIES BY TRUCK.

Philadelphia, Washington and Baltimore are enabled to get produce from the big farming area around Gettysburg, Pa., through the establishment of a motor truck route from the Gettysburg post-office.

FINANCIAL FACTS OF INTEREST

Midwest Engine Co. Begins Nation-Wide Drive to Promote Sales

The Midwest Engine Co., Indianapolis, Ind., manufacturer of the Midwest Utilitor, Midwest heavy duty truck and tractor engines and other automotive and farm power products, has launched an intensive sales promotion campaign to take in the entire country from Portland, Me., to Portland, Ore., and from the lakes to the gulf. It is heralded as the greatest selling drive ever conducted by an automotive or farm power concern.

A thorough analysis of the Utilitor market and Utilitor operations and opportunities are now being made throughout the length and breadth of the land. Expert demonstrators, agricultural specialists, mechanical men and representatives of the general sales department are accompanying district representatives on tours of each section.

A study of soil conditions and crop growing practises is being made by the agricultural experts and it is confidently proclaimed that the Utilitor farm service bureau has already obtained as much if not more first hand information of value to crop growers as has ever been assembled in one farm power factory heretofore.

The visit of the factory experts to local service men has not only resulted in improved service methods, but has brought an unprecedented sales stimulus to local distributor and dealer everywhere.

The campaign has resulted in a rising demand the country over for Utilitor sales and Utilitor dealer propositions. The Midwest Engine Co. announces that this campaign will go on for weeks yet in various sections.

Plans are also being made so that the Utilitor products will have the prominence their importance demands at the next national show.

GMC STOCK SUBSCRIBED FOR.

J. P. Morgan & Co., announced on July 14 that more than 99 per cent. of the 3,223,291 shares of General Motors Corporation common stock recently offered by that financial concern had been subscribed for by shareholders of the corporation at the time of the closing of the subscription books. The statement added: "As the sale has been completed of the stock to be taken by the underwriting syndicate, it is planned to dissolve the syndicate in a few days."

50 PER CENT. TRAFFIC DIVIDEND.

The Traffic Motor Truck Co., St. Louis, Mo., has declared a stock dividend of 50 per cent. on its \$500,000 of issued capital stock, the par value of which is \$100. The dividend was taken out of treasury stock, the stock being increased to \$1,000,000 the first of the year.

RECORD SELDEN BUSINESS FOR FIRST HALF OF YEAR.

Reports at the regular meeting of the Selden Truck Corporation, at its Rochester, N. Y., headquarters, June 21, show that the company has done a record business for the first half of the year and that recently completed additions and an enlarged selling organization will bring an even greater increase in business for the last six months of the year. The Selden organization covers every city and town in the United States and Canada and is strongly entrenched in foreign countries.

A quarterly dividend of 2 per cent. was declared payable July 1 to all stockholders of record as of June 19, 1920, and in addition to this a 2½ per cent. dividend was authorized paid by the board of directors to second preferred stockholders, also payable at the same time.

International Motor Truck Corporation Earnings

The International Motor Truck Corporation, manufacturer of the Mack truck, earned over \$1,700,000, after all charges, including taxes, during the first five months of the current year. This is at a rate of \$4,080,000 for the year. Deducting a year's dividends on both classes of preferred stock, these earnings are at the rate of \$10.50 a share on the common stock, and for the first five months profits have, of course, shown very little benefit from newly acquired resources, consisting of the New Brunswick plant and \$12,000,000 cash. As of May 31 last the balance sheet shows net quick assets of \$21,221,000, or some \$5,000,000 in excess of the par of both classes of preferred stock. The company plans to increase its production from 9000 to 12,000.

INTERNATIONAL DIVIDEND.

The International Harvester Co. has called a special meeting of stockholders for July 29 at Newark, N. J., for the purpose of authorizing the increase in capitalization recommended by the directors and to approve the proposal to distribute a 12½ per cent. stock dividend to common stockholders.

RAINIER REPORT.

The Rainier Motor Corporation, Flushing, L. I., in its financial report for the first quarter, shows assets and liabilities of \$1,743,097. The capital of the company is \$900,000 and the surplus \$659,403. Current assets are listed at \$997,989.

MOTOR WHEEL DIVIDEND.

The Motor Wheel Corporation, which has its stock listed on the Detroit exchange, has declared a stock dividend of 50 per cent. common and 2½ per cent. in cash.

GMC Plans Production of 170,000 Farm Trucks and Tractors

The development of its truck, tractor and farm implement lines will be one of the chief aims of the General Motors Corporation, which has new financing to the tune of \$64,000,000, in addition to the backing of J. P. Morgan & Co., and other big financial interests.

The production schedule for the fiscal year starting Aug. 1 calls for an output of 170,000 tractors and farm trucks, in addition to 690,000 passenger and commercial vehicles, to an estimated total value of \$800,000,000.

J. P. Morgan & Co. has acquired a large interest in the concern and has underwritten 1,419,856 out of the 3,219,856 shares of common to be issued. The new stock will be offered to shareholders at \$20 per share to the extent of 20 per cent of their holdings. The stock not underwritten will be sold to the England and Canadian syndicate, to whom rights were sold a few weeks ago.

Edward R. Stettinius of J. P. Morgan & Co., George F. Baker of the First National bank and Seward Prossner of the Bankers Trust Co., New York City, are new members of the board of directors. A quarterly dividend of 25 cents a share and a stock dividend of 1-40 of one share in common stock has been declared.

In a letter to stockholders President Durant points out that from July, 1915, to December last the gross capital employed in the business has increased nearly eight times, to which will be added the \$64,000,000 to be raised by the current financing; gross sales have increased nearly five times, and net before taxes have increased six times. Fixed assets increased from \$15,819,851 to \$153,803,642, or nearly 10 times; net working capital from \$31,403,478 to \$129,955,812, while miscellaneous investments jumped from a mere \$367,184 to \$56,700,204. Funded debt was entirely eliminated with the exception of \$150,000 in a small purchase money mortgage, and surplus account increased over \$58,000,000. Reserves gained more than \$40,000,000, and the total capital stock liability jumped by leaps and bounds from \$31,000,000 to over \$238,000,000, or over seven times.

SPICER DIVIDEND.

The Spicer Manufacturing Co., South Plainfield, N. J., manufacturer of universal joints and propeller shafts, has declared an initial dividend of 50 cents a share on common stock payable Aug. 1 to stock of record July 20. For the first four months of the year the company's earnings after taxes were at the rate of \$2,000,000 annually.

The Motor & Accessory Manufacturers' Association 1920 Credit Convention will take place at Cleveland, O., Sept. 16-17, being tentatively determined for meeting.

NEW PLANTS AND EXPANSION PLANS

BRIDGEPORT CORPORATION TO PUT OUT THREE TRUCKS.

The Bridgeport Motor Truck Corporation, Bridgeport, Conn., will soon be ready to place in the market a series of 1½, 2½ and four-ton worm-drive trucks. The company has the factory used for the production of Riker trucks during the war. Standard parts, including the Buda engine, Cotta transmission, Stromberg carburetor, Hartford automotive drive shafts, Ross steering gear and Spring Perch springs, are to be used. Fifteen trucks a day is the early production program.

The officers of the company are: President, R. D. Campbell, with many years' experience as a sales executive; vice presidents, G. A. Latons, formerly with the Latons Manufacturing Co., Worcester, Mass., and George L. Cramer, president New Jersey Truck Co.; treasurer, A. M. Nichol, formerly with the American Blower Co.; secretary, T. H. Bartley, who is also secretary of the Bridgeport Engineering Co.; president of board of directors, Hugo Hofstetter, who is also president of the Polak Tire Co.

NO MORE ARMLEDER WAGONS.

The O. Armleder Co., Cincinnati, O., has been forced to discontinue the manufacture of Armleder wagons because of the strong demand for Armleder trucks. The change allows new space for truck manufacture and high speed machinery of the latest design has been installed in the new quarters to do the fine machine work necessary on the Armleder trucks. The call for this product has doubled this year and indications point to another doubling of orders in 1921.

FIELD CO. INCORPORATES.

The Field Manufacturing Co., Owosso, Mich., designers and builders of truck bodies, has been incorporated and plans additional buildings and other expansion plans that will triple its capacity. The officers are: President, J. F. Field; vice president and treasurer, E. J. Frederick; general sales manager, A. L. Ditter; advertising manager, S. Hugh Paine.

FALLS MOTOR CORP. ON HIGH.

The Falls Motor Corporation, Sheboygan Falls, Wis., reports present earnings on common stock to be at the rate of 25 per cent. after all charges. The company has declared all back dividends on the preferred stock covering a period of 21 months.

CURRAN-DETROIT DIRECTORS.

The Curran-Detroit Radiator Co., Detroit, has added W. J. Murray of the Murray Cartage Co., and E. P. Harms of the Detroit Vapor Stove Co. to its list of directors.

NASH ORDERS FOR \$74,000,000.

The largest number of distributors of Nash passenger cars and trucks ever gathered together assembled at the plant of the Nash Motors Co., Kenosha, Wis., June 15, for a three-day convention at which the enthusiasm of the dealers was evoked to the ninth degree by the announcement that contracts for a total of \$74,000,000 worth of these Nash products in the next 12 months are on the company's files. The new factory at Milwaukee, where the Nash four-cylinder car is to be built, was inspected and won hearty commendation. The Nash message was given to the distributors by President C. W. Nash and Vice President Charles B. Voorhis.

MAKES IRON MOUNTAIN AXLES.

The Iron Mountain Co. has been organized and has erected a large and modern plant in Chicago for the manufacture of worm-drive truck axles. The site at 95th street and Cottage Grove avenue occupies 14 acres and the first units of the factory provide 44,000 square feet of working space. The production schedule calls for 50 axles a day.

The officers of the new company are: President, C. E. Jernberg; vice president in charge of sales, C. H. Peterson; secretary, O. H. Anderson; chief engineer, H. L. Knudson; superintendent, J. V. Newstrom.

TO MAKE TRUCKS AND TRACTORS.

The Wharton Motors Co., Dallas, Tex., which is headed by Thomas B. Wharton, will manufacture trucks, tractors and passenger cars in a new \$300,000 fire-proof building to be erected at once. Machinery valued at \$100,000 will be installed in the new building.

EAGLE TRUCK CORP. EXPANDS.

The Eagle Motor Truck Corporation has secured additional property on each side of its factory at 6154-60 Bartmer avenue, St. Louis, and will immediately extend its plant facilities to allow a tripling of its present output.

TO RUSH ELECTRIC TRUCK PLANT.

The Steinmetz Electric Motor Truck Corporation has purchased the property of Reus Bros., at Arlington, Md., and will rush the erection of a plant in order to begin the manufacture of trucks at the earliest possible date.

TO TRIPLE TRIANGLE PRODUCTION.

The Triangle Truck Co., St. John's, Mich., is rapidly equipping its new factory building with modern machinery and intends to triple production when the new plant gets in full production at an early date.

GOODRICH CO. PUTS \$10,000,000 IN NEW BUILDINGS.

The B. F. Goodrich Rubber Co. is increasing the size of its plant at Akron, O., 20 per cent., the cost of construction, equipment and machinery being over \$10,000,000. The new buildings embrace 779,000 square feet of floor space, the company's total now being 4,554,304 square feet. This space is engaged in the manufacture of tires, hose, boots, shoes and other rubber goods.

One of the new structures, a warehouse with 530,000 square feet of floor area, will be the largest factory building in the city. The second largest building will provide 200,000 square feet and will be devoted exclusively to tire building. The added floor space alone is larger than that of three-fourths of the rubber companies in the United States. It is anticipated that the building programme will be nearly completed by winter.

VULCAN MOTOR AXLE CO.

Men who have been prominent in the axle industry for years have formed the Vulcan Motor Axle Co., Detroit, with capitalization of \$1,000,000, to build a complete line of axles for motor vehicles. The officers are: President and treasurer, F. C. Gilbert; vice presidents, R. B. Weaver, Sidney C. Love and C. C. Miller; secretary, J. T. Hanlon; chief engineer, R. G. Beechler.

TO BUILD TEXAN BODIES.

The Texas Motor Car association, Fort Worth, Tex., has begun the building of bodies for all Texan cars and trucks, under the direction of H. B. Hall, formerly of the Hall Body Works, the Fisher Body Corporation, the Pierce-Arrow Motor Car Co. and the Packard Motor Car Co.

TAKES FORMER GRANT PLANT.

The Grant motor plant in Findlay, O., has been purchased by the Differential Car Co. of New York city, which will employ several hundred men in manufacturing utility cars, electric dump cars, motor trucks and trailer dumping bodies.

WOOD GETS HOIST PLANT.

The Horizontal Hydraulic Hoist Co., Milwaukee, Wis., has been taken over by Gar. Wood of Detroit and his brother, Logan Wood, who has been named vice president and general manager, is in active charge.

NEW ONE-TON TRUCK.

The Cyclone Starter and Truck Co. will manufacture one-ton trucks and Cyclone starters in a new factory now in process of construction at Greenville, S. C. Production is due to start Sept. 1.

INDUSTRIAL DEVELOPMENT PROJECTS

\$1,500,000 PLANT TO SERVE THE SAMSON TRACTOR CO.

President W. C. Durant of the General Motors Corporation and President Conrad A. Maertel of the Waukesha Malleable Iron Co., recently closed a deal at Waukesha, Wis., whereby the plant and business of the latter concern was taken over to provide a malleable casting supply for the Samson Tractor Co., a General Motors subsidiary at Janesville, Wis.

The sum of \$1,500,000 was involved in the deal, which was on the basis of a five-year lease with option to purchase at the end of three or five years. The Waukesha company employs 600 hands and is capitalized at \$1,000,000. Important extensions will be made. It will retain its identity and executive personnel, although under the direct management of President J. A. Craig of the Samson Tractor Co.

MORE DEPENDABLE CAPITAL.

The Dependable Truck & Tractor Co., Galesburg, Ill., has increased its common stock from \$750,000 to \$1,250,000, the extra \$500,000 in common being issued from time to time to care for expanding business. Orders on hand ensure capacity production for the year. Officers have been elected as follows: President and general manager, C. G. Morse; vice president, A. E. Patchin; secretary-treasurer, J. J. Welsh.

REPUBLIC PLANT HUMMING.

The Republic Motor Truck Co., Alma, Mich., is showing greater activity than ever since John N. Willys assumed control. It is anticipated that the production schedule of 15,000 trucks for this year will be increased under the new regime. Instructions have been issued to buy all necessary materials and put the plant at maximum manufacturing speed.

KALAMAZOO EXPANSION.

The Kalamazoo Motors Corporation, Kalamazoo, Mich., is rapidly getting into increased truck production, its latest factory addition having been completed. The new building provides 7117 square feet of floor space, allowing the expansion of several departments and making room for additional equipment.

TO BUILD TRUCKS IN VARIETY.

The Automotive Trailer Corporation, Springfield, Ill., is constructing a unit plant near No. 2 mine, which will be devoted to the manufacture of trucks ranging in capacity from $\frac{3}{4}$ to 10 tons.

MAXWELL TRUCK PRICES UP.

Effective July 1 the Maxwell Motor Co. advanced the price on all models of trucks \$150.

SELDENS GOING STRONG.

President George C. Gordon announced at a recent meeting of the Selden Truck Co., Rochester, N. Y., that business for the first half of the year exceeded by far any previous six months in the history of the concern. With recently completed additional factory facilities and an enlarged selling organization, the last half of the year is certain to establish a new record.

A quarterly dividend of two per cent. was declared payable July 1 to stockholders of record June 19 and a $2\frac{1}{2}$ per cent. dividend to be paid second preferred stockholders was authorized at the same time.

GENERAL MOTORS REPORT.

The General Motors Corporation in its report to the New York Stock Exchange on application to list new shares shows the following results for the first quarter of the year: Net profit after all expenses, ordinary taxes, maintenance, depreciation, etc., \$28,081,166; Federal taxes, expenses, etc., \$8,328,650; balance, \$19,754,516; General Motors' proportion thereof, \$19,603,405; debenture dividends, \$860,984; preferred dividends, \$242,288; balance, \$18,500,133; common cash dividends, \$4,598,592; surplus, \$13,901,541.

NEW WINTHER BUILDING.

The Winther Motor Truck Co., Kenosha, Wis., has its proposed addition, 400 by 60 feet, already under construction and hopes to have it completed by Aug. 31. This extra space will permit the company to more than double its output. The building will be of modern saw-tooth construction and up-to-the-minute in every detail. It will be equipped with the latest and most approved machinery. A spur track from the Chicago & Northwestern railroad makes shipping facilities excellent.

JACQUET PLANT NOT MOVED.

L. W. Wilson, vice president and general manager of the Jacquet Motors Corporation of America, Belding, Mich., has advised the publishers of America and the trade in general that rumors circulated to the effect that the Jacquet Motors Corporation of Belding would move its factory to Manitowoc, Wis., were absolutely without foundation. The company is not intending to move its factory. The report of removal, he claims, was circulated by a former official of the concern who recently withdrew and placed in circulation many misleading statements, all of which Mr. Wilson desires to offset by a plain statement of facts.

The General Motors Research Corporation has been incorporated in Delaware with a capital of \$100,000 to acquire and develop patents of all kinds.

MORGAN INTERESTS IN GENERAL MOTORS DIRECTORATE.

The General Motors Corporation on July 15 at New York elected Edward R. Stettinius of J. P. Morgan & Co., a director. Others elected to the board were George F. Baker, Jr., vice president of the First National bank; Seward Prosser, president of the Bankers' Trust Co.; William H. Woodin, president of the American Car & Foundry Co.; Owen D. Young, vice president of the General Electric Co., and C. M. Wooley. Messrs. Stettinius, Baker and Prosser were named on the finance committee.

Earnings of the company for May and June were reported higher than for any two months in the history of the concern.

TO MAKE TRUCKS AND TRACTORS.

The Southern Automobile Manufacturing Co., Memphis, Tenn., with \$1,000,000 capital, is fast getting its factory in the manufacturing district of that city ready for production. The company will manufacture, assemble and sell trucks, tractors, automobiles and tire equipment. The officers are: President and general manager, W. A. King; vice president and general counsel, Lovick P. Miles.

CONTINENTAL AXLE EXPANDS.

The Continental Axle Co., Edgerton, Wis., which was established a year ago and is largely owned by stockholders of the Highway Trailer Co. of that city, has been forced by expanding business to double its original plant and to increase its capital stock from \$200,000 to \$500,000. The company, of which Andrew McIntosh is president and E. Z. Menhall secretary, is manufacturing motor car, truck and trailer axles.

SHIP WHITES BY WATER.

The White company branch, St. Louis, Mo., on July 1 got a shipment of 69 trucks from the White plant at Cleveland, without resorting to railroad transportation. The trucks moved under their own power from Cleveland to Pittsburgh and thence traveled on the barge Mariner and steel tug John L. Lowery by water to St. Louis. Later 15 of the trucks were driven across state to Kansas City.

TO MINE OWN COAL.

The General Motors Corporation and Standard Parts Co. are included among a number of big companies which have merged on the proposition of buying coal lands in West Virginia, Kentucky, Ohio and Pennsylvania valued at \$12,000,000. The Bertha Coal Co. is included. An \$8,000,000 output will be increased 50 per cent.

SIDELIGHTS ON TRUCK SERVICE



One of the Fleet of Rainier Truck Chassis Equipped with Passenger Body, for Public Service in the City of Nantoon, China.

American Passenger 'Bus Service Will Be Inaugurated at City of Nantoon, China

Nantoon, China, is being made a model city a la America, and not the least of the a la mode touches will be the running of six motor omnibuses on Rainier chassis, each carrying 30 passengers. Chang Cheln, former Chinese minister of commerce and agriculture, who has recently been studying American manners and customs, is the moving spirit behind this civilizing enterprise. He recently left New York and will return to his office at 721 Fifth avenue in the fall, his dream largely fulfilled.

The business houses and many of the homes in Nantoon are being electrically equipped. A new police system, industrial and common schools, modern banking houses and magnificent office structures are among the leading improvements.

The Rainier omnibuses will be operated by a company controlled by Mr. Chang and will have definite routes and schedules. He believes truck transportation to be the foundation of progress in China and is going to try the Rainier trucks on the rebuilt roads of Nantoon in anticipation of larger fleet to follow. The Rainier omnibuses are to be the only means of transportation in Nantoon.

MORE GEM TRUCKS.

The Gem Auto Truck Co., Troy, N. Y., which is turning out a light four-cylinder truck, is expanding its facilities, including the purchase of new machinery.

RUTH ROLAND IN A BLIMP.

Ruth Roland, Cinema star, recently took a ride near San Diego, Cal., in the new Goodyear Pony Blimp and immediately engaged the world's smallest practical dirigible to use in new episodes of a serial in which she is starring.

Truck Serves As Portable Well Puller; Boosting Oil Production

The call for increased oil production during the present gasoline scarcity has been answered for the Shell Oil Co. of California and the General Petroleum Co. by a Mack truck. This truck, with an especially designed hoist, has been used as a portable well puller. The power for the operation of the hoist is supplied by the truck engine. This apparatus is made highly productive, not only through its ability to go from one operation to another, but because the hoist can be removed and the chassis used for general transportation purposes.

For pumps to operate efficiently it is necessary that the sand which accumulates in the wells be cleaned out at frequent intervals. The truck hauls up the tubing and then furnishes power to operate the baler with which the sand is removed.

The Goodyear Tire & Rubber Co., Akron O., maintain two large libraries for use of its employees. The factory library has 1600 books and 3000 catalogues.



A Mack Truck Equipped with Apparatus for Quickly Removing Casings and Obstructions from Wells in the Oklahoma Oil Field.

Sales and Distributing Staff is Organized to Market Hares' Motors Products

Vice President Henry Landsdale of Hares' Motors, director of distribution and maintenance for this recently formed organization, which is the controlling company for Locomobile, Mercer and Simplex cars, and Riker trucks, has announced the acquisition of some of the leading figures of the automotive field for the executive personnel of his distributing staff.

P. W. Hine, who has been an important executive with the Locomobile company for eight years, has been made general distribution manager, with offices in New York city. He succeeds E. A. Travis, who takes over the New York Locomobile branch. M. C. Wessman succeeds Hine as distribution manager of the Locomobile division and L. B. Waters succeeds Wessman as manager of the specification department.

C. B. Morse has been named general advertising manager, with headquarters in New York city. He has been advertising manager of the Packard Motor Car Co. of New York and known not only in the automotive industry, but in the advertising, newspaper and printing trades where he served a number of years.

Special representatives appointed include B. C. Helm, C. R. Norton, H. S. Norton and Fred H. Miller, all Packard men; J. Murray Page and C. A. Kingsley, Locomobile executives, and Erle E. Devlin, with Buick and Paige experience.

NEW KELLY OFFICE BUILDING.

The Kelly-Springfield Motor Truck Co., Springfield, Ill., which recently took possession of a new factory unit, has also started work on a new executive office building. It will be of three stories. The quarters at present occupied as the general offices will be given over to the production department. The unit recently completed is being used as an assembly section. It is of concrete construction, 80x600 feet.

ODDITIES OF INDUSTRY AND TRADE

Fleet of Grocery Stores on Truck Chassis Do a Fine Business in Detroit Suburbs

The C. F. Smith Co., Detroit, owns five grocery stores for which it pays no rent. These "stores" are mounted on motor trucks and are complete in every detail. The truck stops at the customer's door, the housewife steps in, looks over the stock and makes her purchases just as she does at the corner grocery. Then the grocer moves on to his next customer.

The Lockwood Engineering Co., Saginaw, Mich., built these stores, which are fitted with white enamel refrigerators, bread and pastry cases and wire basket shelving. The trucks are mounted on Sewell Cushion Wheels. Overhead and delivery expense is cut materially and these movable stores are being operated most successfully.

CANADA'S SHOW AUG. 28.

Two demobilization buildings, adjoining the Transportation building, will house the trucks and accessory exhibits at Canada's only National Automobile Show to be held in conjunction with the Canadian National Exhibition. Exhibition City, Toronto, Aug. 28-Sept. 11. Fully a million people saw last year's Toronto show. The tractor display will be under canvas. It is anticipated that the Automotive Palace, which will allow all exhibits in one building, will be ready by 1921.

TRAFFIC OFFICERS TO MEET.

E. J. Doran, leading traffic authority of New South Wales, and large delegations of traffic experts from Canada, will attend the National Traffic Officers' convention to be held in San Francisco next month. Although the visitors will not be allowed to vote they will be given full opportunity to express their views.

N. A. C. C. IN NEW QUARTERS.

The National Automobile Chamber of Commerce, Inc., is moving this month into its new quarters in the Marlin-Rockwell building, New York city. The ample new quarters will be highly appreciated after the cramped conditions under which the organization has labored at the Grand Central Palace.

BECKWITH WITH KING.

The King Trailer Co., Ann Arbor, Mich., has engaged H. L. Beckwith as general manager. He resigned as service manager of the General Motors Truck Co. July 1.

30,115 CALIFORNIA TRUCKS.

In the first half of the year 30,115 trucks were registered in the State of California.

BIG FRUIT CROPS TO BRING CALL FOR TRUCKS.

Conditions in the fruit growing areas indicate that there will be very general use of motor trucks to haul the crops to market this year, according to reports received by the Standard Motor Truck Co., Detroit, from its distributors and dealers. Nearly all trucks used in this work are equipped with pneumatic tires. Fruit crops are above the average in many centers and where growers have not the volume to warrant the purchase of a truck for their own use they are engaging truck operators to deliver crops in the markets. It is generally admitted nowadays that delivery of fruit by pneumatic-shod trucks is quicker, more efficient and more economical than any other method. Fruit thus hauled is not subject to bruises or blemishes.

The Standard company's Wisconsin

Steel Industry Ships Large Part of Its Production from Mills by Truck

The Interstate Commerce Commission learned something about the value of the motor truck during its hearing at Washington on July 8-10. Another interesting feature was the announcement by M. O. Eldridge of the American Automobile association that not more than 10 per cent. of automobiles are used exclusively for pleasure purposes, while at least that number of passengers on railroad cars ride merely for pleasure. He also cited figures showing that 1,200,000 tons of freight were carried over the highways by 750,000 trucks last year.

W. S. Guy, traffic manager of the Carnegie Steel Co., told of the dependence the steel industry places on motor trucks.



One of the Mobile Grocery Stores Operated by F. C. Smith & Co., in Detroit and Its Suburbs Which Have Proven Very Profitable.

representative states that the apple orchards will produce an increase over last year's crop. A report from Virginia shows that while the prospect for all fruits is not for bumper crops, they are above the average. Pears seem to show the greatest improvement, although the apples and peaches are in a much better condition than they were last year. The situation in Ohio at this time shows that prospects are considerably better than an average crop for all kinds of fruits. In this territory, peaches are making a perfect showing and apples and pears show a marked improvement.

BETTER WASHINGTON ROADS.

The State of Washington will have spent \$11,804,410 on highway improvements since March 13, 1919, when contracts are awarded in August for work for which bids have already been asked. This sum adds 530.39 miles to the state's public highway system, of which 114.25 miles are paving and 416.14 grading and graveling.

Of 49,000 tons produced by one concern, 29,000 are shipped by truck. The Duquesne plant of the Carnegie Steel Co. has been shipping over 50 per cent. of its product by truck. R. E. Riley, traffic manager of the Silica Sand association of Northern Illinois, declared that a 2½-ton truck will handle more freight in a day than a railroad car of 40 to 50 tons capacity.

CONSOLIDATED HAS NEW NAME.

The Consolidated Truck & Tractor Corporation, Detroit, has changed its name to the Consolidated Automotive Industries, Inc., and increased its capital stock from \$1,500,000 to \$2,500,000.

USE BUSES IN TROLLEY STRIKE.

Municipal bus service and 300 small automobiles have been used during the trolley strike at Detroit and have given satisfactory service at reduced rates. The power vehicles hauled thousands daily.

FEDERAL HIGHWAY COUNCIL DRIVE FOR GOOD ROADS

The Transportation Committee of the Federal Highway Council is surrounding itself with picked experts in its great work of putting the highways of the nation in their proper niche in the great transportation trinity, of which the other two components are railways and waterways. An organization which means business and is ready to go ahead at full speed at the word of command is being rapidly mobilized. Chambers of commerce, commercial clubs, civic bodies and other affiliated organizations have been moulded as units in this army of progress.

Cooperating with the Transportation committee are Dr. R. S. McElwee, director of the Bureau of Foreign and Domestic Commerce; Lieut.-Col. J. M. Ritchie of the War Department, and Lee L. Robinson of the United States Council of National Defense. The general policy of the committee is under the direct charge of Charles W. Reid, formerly executive officer of the Council of National Defense.

W. J. L. Banham, general traffic manager of the Otis Elevator Co., New York

City, and a member of the executive committee of the National Industrial Traffic league, is in charge of a committee on policy toward other forms of transportation. His committee will make a close study of short haul and terminal problems. This study will include transportation problems in new territory, transportation surveys, the motor truck in terminal work, store door delivery, motor truck statistics—including costs, rates, etc., and the use of trailers in reducing cost per ton mile.

The Rural Express Plan.

J. H. Collins, manager of the research bureau, Chilton Co., of Philadelphia, and formerly of the Bureau of Markets, United States Department of Agriculture, is chairman of the Committee on Rural Motor Express. The scope of the work of this committee embraces a study of franchises, insurance, uniform receipts and bills of lading, marketing, return loads and the present status and development of machinery for putting the rural motor express into actual operation.

The study of highway transport functions of state highway departments, in-

cluding snow removal, traffic surveys and traffic control by state highway departments, to the end that constructive suggestions for assistance may be offered where desirable, is in charge of David Beecroft, directing editor of the *Class Journal Co.*, New York city.

Truck Owners to Help.

The development of a policy of cooperation with motor truck users' organizations will be in charge of W. H. Stone, associate editor of the *Manufacturers' Record*, Baltimore.

Cooperation in educational work with universities and schools will be directed by Prof. A. H. Blanchard, professor of highway engineering, University of Michigan, and president of the National Highway Traffic association.

The council has just received notification from George W. Taylor, president of the American Railway Express Co., that its vice president and treasurer, F. S. Holbrook, would represent the express company on its transportation committee. When completed the committee will include representation from all agencies of transportation.

\$20,000,000 MORE IN OREGON FOR GOOD ROADS.

The people of Oregon have voted overwhelmingly for a continuance of the big good roads programme now under way. By adopting an amendment to the state constitution \$20,000,000 additional is made available for highway work. This action means that in about two years the entire 350 miles of the Pacific highway in Oregon will be paved, with no grade exceeding five per cent.

NEW JERSEY AFTER TRUCKS.

The State Highway Commission of New Jersey claims that heavy and often overloaded trucks are responsible for most of the wear and tear on the highways of that state and has adopted resolutions in favor of and urging "the passage of laws which will, first, restrict the size and weight of motor trucks allowed to operate upon the highways of New Jersey and, second, increase the annual registration fees of motor trucks to amounts more nearly commensurate with the damage done by such vehicles to said highways."

\$30,000,000 FOR INDIANA ROADS.

The Indiana State Highway Commission is planning a 1921 state highway programme to entail an outlay of from \$26,000,000 to \$30,000,000. This will include the paving of 500 miles of roadway, the maintenance of 3500 miles and the building of many bridges. Automobile license fees will provide from \$2,500,000 to \$5,000,000 of this amount, the latter in the event that the license fees are doubled, as is proposed in some quarters.

STATES TAKE FEDERAL AID.

The various states have taken up 95 per cent. of their Federal aid allotments for highway work up to April 30, three times the amounts called for up to the same date last year. This represents 27,796 miles of highway. Estimates of 1827 more projects, representing 13,845 miles, had also been approved up to May 1.

California, Delaware, Illinois, Idaho, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Minnesota, Nebraska, New Hampshire, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Utah, Washington, West Virginia and Wyoming have each submitted approved projects statements for all or nearly all of their allotments.

COAST ROADS SELL TRUCKS.

More than 600 motor carriers of freight and passengers, covering more than 4000 miles of California roads, recently organized the Motor Carriers' association. The good roads of California have caused an enormous demand for trucks and that state is so thoroughly equipped with highway haulers that a railroad strike today would be almost an unnoticed incident.

MORE CONCRETE ROADS.

While concrete pavements have been built in every state in the Union some states have not constructed paved roads. All that have established paved roads have put in concrete roads. A table issued by the Portland Cement association shows 6,734.6 miles of concrete roads were built in 49 states and territories before 1919 and that 3913 miles were placed under contract in 1919.

URGE EARLY CONSTRUCTION OF CANADA'S HIGHWAY.

The Canadian Good Roads association at its meeting at Winnipeg this month adopted resolutions urging the Dominion government and the provincial governments to co-operate toward the early construction of Canada's national highway. The Federal aid plan was also indorsed.

The following officers were elected: President, A. E. Foreman, chief of the engineering department of public works, British Columbia; first vice president, Dr. E. M. Deslauriers, M. L. A., Montreal; second vice president, Hon. S. J. Latta, minister of highways, Saskatchewan. Vice President Latta and Mayor Church of Toronto made inspiring pleas for good roads.

REDUCE TOLLS FOR PNEUMATIC TIRED TRUCKS.

H. A. Githens, general sales manager of the Federal Rubber Co., Cudahy, Wis., declares that pneumatic tires will help solve the electric starting and lighting problems for motor trucks. Pneumatics will save batteries and the wear and tear. A St. Louis bridge company has reduced bridge tolls 35 per cent. on trucks equipped with pneumatic tires.

TOURS BOOM BOND ISSUE.

Truck tours to begin in August and last six weeks will be made in Missouri to boom the campaign for a \$60,000,000 road bond issue, to be voted on in November. A tour from St. Louis will cover the southern part of the state and another from Kansas City will be routed over the northern part.

HIGHWAY USE AND REGULATIONS

FIGHT LAW LIMITING TRUCK LOADS IN LOUISIANA.

New Orleans automotive dealers of every kind have joined in a fight against a legislative bill barring trucks of more than four-ton capacity off the streets and highways of the state and prohibiting the use of trucks and trailers with steel tires. The Louisiana-Mississippi Automotive Trade association is in general charge of the campaign against the proposed measure. Attorneys have been engaged and a big fund raised to oppose the act.

STATES GET WAR TRUCKS.

The War Department has turned over 24,000 motor vehicles, practically all it has to release, to the Department of Agriculture, which has already distributed half of them to various states. In another two months they will all be disposed of if railroad traffic conditions do not become worse. No move has yet been made to issue tractors and other road building equipment as authorized in the Kahn bill.

GOODYEAR LOANS MAN TO BOOST LINCOLN HIGHWAY.

The Goodyear Tire & Rubber Co. has loaned S. A. Host of its advertising department to the Lincoln Highway association. He will be assistant to S. F. Bement, vice president and secretary at the Detroit headquarters. Mr. Bement has taken over the work formerly directed by H. C. Osterman, who was killed in an automobile accident recently.

CONNECTICUT PUTS OVERWEIGHT TRUCKS OFF ROADS.

Connecticut officials are meeting trucks at the state line and weighing them to ensure that all entering the state conform to the weight limit of 20,000 pounds. Some trucks have been ordered off the roads.

GASOLINE FOR TRUCKS FIRST.

While the gasoline shortage continues in California the farmer and the commercial vehicles are being cared for ahead of the passenger car. Owners of these business vehicles are forced to wait in line, however, and hours of valuable time are lost, deliveries delayed and business held up generally. There is no immediate relief of the situation apparent.

RURAL EXPRESS FOR DULUTH.

Six ship-by-truck lines will soon be running out of Duluth, Minn., over regularly scheduled routes. Sufficient capital has been pledged to carry through the enterprise. J. T. Lunch of the Master Truck & Tractor Co. is the moving spirit in planning the project.

NO FUNDS TO PUSH GOVERNMENT HIGHWAY PLANS.

Failure of Congress to provide necessary appropriations will cause a number of government movements for the furtherance of highway projects to be abandoned or their activities reduced. A plan of the Bureau of Foreign and Domestic Commerce to investigate and cultivate foreign markets for American motor trucks and adjuncts must be given up. Scientific investigations of road materials and a series of field experiments to determine the comparative values of the various methods of road construction and maintenance must be reduced to a minimum.

In this connection the following government funds are available:

For inquiries in regard to systems of road management and for giving expert advice on this subject, \$36,200 for investigations of the best methods of road building and the best kinds of road making materials, and for furnishing expert advice on road building and maintenance, \$102,300; for investigations of the chemical and physical character of road materials, for conducting laboratory and field experiments and for studies and investigations in road design, independently or in cooperation with state highway departments and other agencies, \$77,020; and for conducting field experiments and various methods of road construction and maintenance in conjunction with the investigation and development of equipment intended for the preparation and application of bituminous and other binders, \$25,000.

FREIGHT RATES ADD \$1000 A MILE TO ROAD BUILDING COSTS.

It is claimed that a 25 per cent. increase in freight rates on a ton of gravel will automatically add \$1000 a mile to the cost of road building. The Interstate Commerce Commission has been asked to rule against this proposed increase.

NEW TRUCK BODY CONCERN.

The Commercial Body Co., Columbus, O., has taken over the business of the Warren & Southwick Carriage Co., that city. The new company will manufacture bodies for all kinds of motor trucks, but will give special attention to bodies for one-ton Ford trucks. The active management of the new concern includes C. W. Finch, A. M. Lupton and C. R. Benner.

20,000 BETHLEHEMS A YEAR.

The Bethlehem Motors Corporation, Allentown, Pa., which is spending \$1,363,000 on plant additions and equipment this year, expects production to reach a 20,000 yearly rate by next month. The schedule for this year calls for a 275 per cent. increase in output over 1919.

AGAINST COSTLY ROADS.

John C. Brown, president of the Indiana State Federation of Farmers, and John R. Riggs of that state, formerly assistant secretary of agriculture, have joined in a protest against the spending of money for high priced roads. They claim that the money, the material and the labor might be put to more essential work. They call for the doing of repair work first, arguing that this latter course will allow the farmers to better get their produce to market and their children to school.

ASK CONSTRUCTION OF MISSOURI LOAD LIMIT LAW.

The Commercial Car Bureau of the St. Louis Automobile Manufacturers and Dealers' association has appointed a committee to secure from the state a definite construction of the law regulating truck loads and tires. General Sales Manager H. H. Hawke of the Traffic Motor Truck Corporation, heads the committee, which will hold an early conference with Attorney-General Brundage.

STRONG SENTIMENT IN GEORGIA FOR \$50,000,000 ISSUE.

A state-wide lecture tour in behalf of the \$50,000,000 bond issue for good roads has just been completed by Frank Reynolds, secretary of the Georgia County Commissioners' association, who found a strong sentiment everywhere for the measure and who is confident of its adoption by a large majority.

NEW JERSEY LEGISLATURE FOR TOWNSEND BILL.

New Jersey is the sixth state through which the Lincoln Highway passes which has gone on record in favor of the establishment of a Federal Highway System. The New Jersey Legislature recently passed a concurrent resolution favoring the Townsend Highway bill and urging the members of Congress from that state to work for the passage of the measure.

NEW VIM PLANT.

The Vim Motor Truck Co., Philadelphia, is remodeling the former gun plant of the Midvale Steel & Ordnance Co., Wayne Junction, which it recently secured from the War Department. The site comprises 25 acres. Production of trucks will be begun at an early date. President E. E. Smith has other plans for the expansion of his organization and is not resting on his orders despite the big showing now being made.

NEW COMMERCIAL PLANT.

The Commercial Truck Co. of America, 27th and Brown streets, Philadelphia, is having a new plant built for the manufacture of motor trucks at Huntington Park avenue and Rising Sun lane.

THE ENDLESS CYCLE OF TRUCK UTILITY

Truck Hauls Engine Cylinder 700

Miles to Make Emergency

Repair to Steamer

The dependability of the power truck was strikingly exemplified in April by an Atterbury 3½-tonner, which traveled about 700 miles from Buffalo, N. Y., to Bath, Me., over very bad roads, many in northern New England being then piled high with snow, in five days, so that the steamer Diarico of the Texas Steamship Co. might make a repair and continue service on schedule time.

The accident to the steamer necessitated a new cylinder of a type manufactured in Buffalo. The part was ordered by wireless, but the manufacturer feared to trust the cylinder to unreliable railroad transportation and engaged the truck for the trip. The Atterbury left Buffalo at 6 a. m. April 10. Very bad



An Atterbury Truck That Was Driven from Buffalo to Portland with a Big Cylinder to Make a Repair That Saved Loss of Vessel's Time.

road conditions were experienced for many miles. In some places the snow was so thick and heavy that while the passage had been cut through the drifts for a touring car, the truck, on account of its size, was compelled to push its way through the snow for about eight inches on each side of the road. Notwithstanding this the trip was made without any trouble of any sort and the cylinder delivered to the boat April 15 at 6 p. m., one day before its use was required.

THOMARTS IN PRODUCTION.

The Thomart Motor Co. is turning out its first trucks in the Kent plant at Akron, O., this month and plans to reach capacity production by August. A medium capacity truck will be manufactured exclusively. The company plans to reach high standardization with low unit manufacturing costs.

FIVE MENOMINEE MODELS.

The Menominee Motor Truck Co. will shift its operations from Menominee, Mich., to the plant now being erected and equipped at Clintonville, Wis., about Sept. 1. Although stockholders of the Four-Wheel Drive Auto Co., which makes FWD trucks at Clintonville, purchased a controlling interest in the Menominee company, the latter will be conducted as a separate concern. As at present the company will build rear-drive trucks of one, 1½, two, 3½ and five-ton capacities.

NEW STANDARD ONE-TON MODEL.

The Standard Motor Truck Co. is producing a one-ton model, known as model IK, which is equipped with radius rods. Service and facility for adjustment were the prime consideration in designing this Standard radius rod. The wear on the working parts is compensated by sim-

ply tightening one bolt. Lubrication of the pins at the ends of the radius rods is by easily accessible oilers.

The Model IK will have the Continental "N" motor; Brown-Lipe clutch and three-speed transmission; Timken semi-floating rear axle; Spicer universal joints; Eisemann magneto; Stromberg carburetor; Ross steering gear and Long radiator.

PEERLESS REPORT.

The Peerless Truck & Motor Corporation made sales totaling \$12,928,601 for 1919, with net earnings of \$872,154 after charges and dividend taxes. The sum of \$670,628 was available for surplus after allowing for dividends.

ST. CLOUD FACTORY BRANCH.

The St. Cloud Truck Co., St. Cloud, Minn., has opened a factory branch at Minneapolis.

Government to Help Industry by Assisting in Financing Sales of Trucks

The government is officially reported as having stepped into the breach with an offer of encouragement and even financial aid to the motor truck industry. Rather late, but better late than never. The government stands ready to support the manufacturer even to the extent of interesting capital. Officials realize that the truck answers the present problem of freight congestion and has full knowledge of its utility through war performances and when the railway strike tied up all transportation. This recognition by national agencies is but one more indication that the truck has arrived.

OHIO AUTO INTERESTS FIGHT FOR LASTING ROADS.

The Cleveland Commercial Car Dealers' association has inaugurated a movement to bring a system of Ohio highways that will fulfill the requirements of motor transportation. President George K. Wadsworth announces that millions of the taxpayers' money is being wasted on plans that were designed before Cleveland became a big center for highway transportation and when the railroads could handle all freight.

The need of permanent roads with a proper roadbed will be emphasized before commercial clubs and civic bodies in an effort to enlist their aid in the cause by a committee comprising O. L. Prior of the A. L. Englander Motor Co., A. L. Hays of the White Co. and L. C. Avery of the Packard Co.

NEW DEPARTURE EXPANDS.

The New Departure Manufacturing Co., Bristol, Conn., has its new plant at Meriden, Conn., going along on high. The new factory was recently opened with elaborate ceremonies, Gov. Holcomb and Mayor Donovan being among the distinguished guests. Grand opera, a band concert, vaudeville and dancing were among the features. President DeWitt Page made the occasion memorable by presenting a check for \$5000 to the Meriden hospital.

MITCHELL NOT FOR GMC.

R. C. Rueschaw, vice president of the Mitchell Motors Co., Racine, Wis., denies rumors that the Mitchell factory has been sold to the General Motors Corporation or other outside interests.

DEARBORN DIVIDEND.

The Dearborn Truck Co. on July 1 paid a regular quarterly dividend of 1½ per cent. on preferred stock.

FACTS OF TRUCK USE BRIEFLY TOLD

NEW M. A. M. A. MEMBERS.

Among new members recently elected by the Motor and Accessory Manufacturers' association are the following:

The Adams Axle Co., Findlay, O., manufacturer of passenger car, truck, tractor and trailer axles.

Asch & Co., Inc., New York, N. Y., manufacturer of flower vases, belt hinges, locking devices, etc.

Atlas Crucible Steel Co., Dunkirk, N. Y., manufacturer of carbon and alloy steel.

Duplex Rim Device Co., Chicago, Ill., manufacturer of rim devices and other accessories.

Kalamazoo Spring & Axle Co., Kalamazoo, Mich., manufacturer of flat leaf automobile, carriage, wagon, motorcycle and bumper springs.

Kelso Manufacturing Co., Trenton, N. J., manufacturer of asbestos brake lining and clutch facing.

Miller Rubber Co., Akron, O., manufacturer of automobile tires, tubes, accessories and repair material.

Norton Co., Worcester, Mass., manufacturer of grinding wheels, machinery and abrasive materials.

Rome Wire Co., Buffalo, N. Y., manufacturer of automobile lighting, starting and ignition cables.

Russell Manufacturing Co., Middletown, Conn., manufacturer of brake linings, woven and fiber clutch facings, fan belts, web straps, top webbings, hood and radiator lacings, anti-squeak webbing, belting.

Tillotson Manufacturing Co., Toledo, O., manufacturer of carburetors.

Westinghouse Electric & Manufacturing Co., Swissvale, Pa., manufacturer of lead storage batteries.

SAGINAW TRUCK TOUR.

The "Farm by Truck" tour out of Saginaw, Mich., early this month faced the worst possible conditions, almost continuous rain giving the trucks the real acid test. The farmers were convinced, however, that vehicles which could do good work in such weather were worth while. Big crowds braced the storms to witness the various demonstrations. The only regret of the Saginaw dealers, who staged the tour, was that the rain prevented the hay hauling demonstration, in which much interest had been evinced.

LOAD LIMIT IN ST. LOUIS.

The Board of Aldermen of the city of St. Louis, Mo., has fixed a limit for truck loads. It is declared unlawful for any vehicle, with load, to weigh over 28,000 pounds, to have more than 22,400 pounds on any axle, or a weight greater than 800 pounds per inch on any wheel, or a load 25 per cent. above the truck's rated capacity. The director of streets and sewers, may, however, issue permits for loads greater than those defined.

600 MILES; 50 GALLONS OF GAS.

A record economy trip was recently made by a Standard 2½-ton stripped chassis, equipped with Goodyear Cord tires, from York, Pa., to Detroit, Mich. The run of over 600 miles was made on 50 gallons of gasoline and 1¼ quarts of oil.

Passenger 'Bus a Big Factor in Life of the Students at the Mt. Pleasant Reservation

While Deerfoot got along very handily without power vehicles of any kind, the modern Indian has long since foresworn old-timey methods of travel and transportation in favor of the automobile and the truck. It's some span from the simple transportation devices of the original Americans to the truck of today.

One group of Indians which enjoys modern methods of travel are the students of the United States Indian school at Mount Pleasant, Mich., which is also distinguished as the headquarters of the Transport Truck Co. All attendants at the school are of Indian parent-



The Transport Truck Chassis with Passenger 'Bus Body Used for the Transfer of the Indian Reservation School at Mt. Pleasant, Mich.

age and many are full-blooded scions of famous tribes. A careful observer can pick out the full-blooded ones.

A transport motor bus was furnished the school by the Department of the Interior in September, 1919. Superintendent R. A. Cochran says it has been in constant use either as a bus for conveying students and employees, or for general hauling purposes with a freight body. The superintendent is highly pleased with it. He writes: "We find it very economical in gas and oil and have had no expense for repairs of any kind."

This school is one of the most interesting of federal educational institutions. It numbers nearly 400 students of both sexes. There are excellent courses in the various crafts, and engineering for the boys, and in domestic science for the girls. Superintendent Cochran says they show exceptional aptitude in both lines. There is a large and picturesque log house on the grounds which the Indian boys built themselves from the trees which they brought from the woods, and the stone which they brought from the quarries. It is fitted with every modern

convenience, and is used as a school of domestic science.

Youth of this school figured nobly in the great war. It was represented by more than 30 soldiers of Uncle Sam's best fighting blood. Distinguished service crosses—and some crosses in Flanders field—testify to their bravery.

TENNESSEE AUTO MEN TO PLAY HAND IN POLITICS.

The automobile interests of Tennessee are uniting to fight opponents of good roads. The Chattanooga Automobile club held a banquet July 8, when gubernatorial and legislative candidates were each given five minutes to tell where they stand. It is hoped to elect a governor who will advocate a bond issue of from \$50,000,000 to \$75,000,000, and a legislature which will back him up.

LOS ANGELES ASSOCIATION TO HAVE TRUCK DIVISION.

The Motor Car Dealers' association of Los Angeles, Cal., is to have a motor truck division and the following committee is preparing plans for this feature: Gilbert Woodhill, representing the Kissel truck; C. H. Bushnell, representing the Federal; Jack Tiehen of the Pierce; Roy Compton of the Mack and James Canavan of the White. The motor trucking interests are to face a big fight at the next session of the state legislature. Ridiculous load and speed limitations and special taxes are proposed.

NEW N. A. C. C. TRAFFIC MAN.

To further facilitate the handling of traffic matters affecting the automobile industry, Kenneth A. Moore, formerly general agent of the New York Central lines, has been added to the staff of the National Automobile Chamber of Commerce as assistant traffic manager in the western district, with headquarters at 1009 Ford building, Detroit.

OF PLANT AND SALES PERSONNEL

BINNEY TRAFFIC "AD" MAN.

General Sales Manager Harry H. Hawke of the Traffic Motor Truck Corporation, St. Louis, Mo., announces the appointment as advertising manager of Millard S. Binney, who is widely known in the trade. Mr. Binney succeeds J. Albert McCollum, who is now assistant general sales manager. R. Jackson Jones, who has held the latter post for the past nine months, has been made European representative of the company and has opened headquarters in London.

Officials of the company report a notable expansion in foreign trade in connection with a strong foreign campaign. These changes are a result of the activities of the concern overseas.

NAPOLEON MOTORS CO. OFFICE TO DEALER'S DOOR BY TRUCK.

The Napoleon Motors Co., Traverse City Mich., is not asking its eastern distributors and dealers to call at factory or district headquarters, but has established an office which moves by power and which calls on its representatives. This complete office is mounted on a 1½-ton Napoleon truck which left Traverse City, June 24, and has since covered most of the East.

NEW FRANKLIN EXECUTIVES.

The Franklin Automobile Co., Syracuse, N. Y., has named A. G. Maney, formerly with the Wright-Martin Aircraft Corporation, as assistant to President H. H. Franklin. Production Manager William Dunk announces the appointment as general factory superintendent of Conrad Deierlein, who has been with the company 12 years.

DENBY PROMOTES BARNETT.

The Denby Motor Truck Co., Detroit, Mich., has appointed R. E. Barnett district manager for the territory embracing Tennessee, Kentucky, Mississippi, Alabama and Georgia. He has been with the Southern Denby Co., Nashville, Tenn., and knows the truck game from A to Izzard.

COGILL HURLEY MANAGER.

The Hurley Motor Co., Washington, D. C., which handles the Nash and Selden trucks in that city and adjoining territory, has appointed H. F. Cogill sales manager. He was formerly with the Auto Outing Co., Baltimore, Md.

GOSSETT WITH N. A. C. C.

Capt. L. E. Gossett, a graduate of the Motor Transport Corps, has become affiliated with the motor truck department of the National Automobile Chamber of Commerce, his labors being employed in the rural motor express division.

Hamilton Motors Names Martin

General Sales Manager and Oswald Chief Engineer

The latest move by General Manager W. G. Jarman of the Hamilton Motors Co., Grand Haven, Mich., manufacturer of Apex trucks, to perfect a sturdy organization for the production and marketing of a high grade line of trucks, is the appointment of A. L. Martin as general sales manager and H. A. Oswald as chief engineer.

Mr. Martin has been in the automotive industry for 16 years. Associated with his brother, W. C. Martin, he was the first metropolitan distributor in New York of Cadillac automobiles. The two brothers introduced the Rolls-Royce car to the United States, Canada and Cuba. When the Cadillac plant became a part of the General Motors industries, A. L. Martin joined the General Tire & Rubber Co. of Akron as sales manager. He comes to the Hamilton Motors Co. from the Four-Wheel-Drive Co. of Clintonville, Wis., where he was manager of the dealers' department.

Mr. Oswald's engineering experience dates to his connection with the Ford Motor Co., in the days of the old Ford model Y and six-cylinder 999. Later he was connected in an executive way with the Lozier Motor Car Co., and with the manufacture of the Grabowski truck, one of the earliest makers of a practical gasoline engined freight vehicle. He was at one time connected with the Fiat company of Milan, Italy, and during the world war was general superintendent of naval aircraft factory, manufacturing seaplanes for the navy. He relinquished the position of chief engineer of the Quaker city corporation to make his new connection as chief engineer with the maker of Apex trucks.

FRANKLIN DEALERS IN EUROPE TO HOLD CONFERENCE.

Sales Manager S. E. Ackerman of the Franklin Automobile Co., Syracuse, N. Y., is in Europe, where he will preside at a conference of European Franklin dealers at the Hotel Savoy, London. He will visit Paris, Brussels and other cities, returning some time next month. During his travels he will study European trade conditions.

PIERCE GETS COLDEWAY.

The Clarke-Leu Co., distributor of Pierce-Arrow cars and trucks in Albany, N. Y., has signed A. T. Coldeway as manager. He was formerly manager of the Clyde Automobile Co., distributor of GMC trucks in that territory.

REYNOLDS SIGNS HALL.

The Reynolds Motor Truck Co., Mount Clemens, Mich., has secured Claude Hall, formerly of the J. C. Wilson Co., as general superintendent.

MURRAY HEADS BETHLEHEM.

The Bethlehem Motors Corporation has elected A. T. Murray, its former president, to that post again, succeeding H. F. Harris, who was elected in January and has just resigned. Mr. Harris, who was sales manager of the Republic Truck Co. previous to January, has devoted most of his time recently to the development of the Allentown plant and the motor works at Pottstown. This work has been practically completed. He will take a brief rest before making future plans.

GMC WELFARE WORK.

The General Motors Corporation has engaged Rev. Howard J. Clifford, formerly of the First Presbyterian church, Saginaw, Mich., and for several years in charge of welfare work for the Buick Motor Co., to take charge of the opening of a new department of personal relations, the influence of which will reach the 60 cities in which General Motors has plants. He will be on the personal staff of President W. C. Durant.

STUDEBAKER CHANGES.

The Studebaker Corporation, Detroit, Mich., has made a number of changes in its executive personnel. L. J. Ollier, formerly vice president, who has just returned from the other side, will have charge of export sales. Harry A. Biggs is the new vice president. E. H. McCarthy and H. S. Welch will be assistants to the vice president.

OLDS ADVANCE O'BRIEN.

The Olds Motor Works, Lansing, Mich., has placed Thomas T. O'Brien, manager of the truck department, in charge of all sales promotion work, including the advertising department. O'Brien has held important positions with Bethlehem Motors Corporation and Willys Overland Co.

MOHLER LEAVES ARMLEDER.

C. M. Mohler, in charge of manufacturing and engineering as assistant to the general manager of the Armleder Co., Cincinnati, O., has been appointed service superintendent for the Simons Sale Co., Detroit, Michigan distributor of Willys-Overland cars.

OLDS PROMOTES GERMAN.

L. R. German, comptroller of the Olds Motor Works, Lansing, Mich., and widely known in the industry, has been made a vice president and director of that organization.

A. E. BARKER RESIGNS.

Arthur E. Barker, who has been with Dodge Brothers, Detroit, for a number of years, recently as supervisor of districts, has resigned.

Garage and Service Station Machinery Tools and Equipment

NEW INSULATED WIRE STRIPPER.

The France Manufacturing Co., Berea Road and West 104th street, Cleveland, O., makes a new device known as the F-F Insulated Wire Stripper, which is motor driven, for use in electric repair stations, service stations, etc. It is designed to simplify and reduce the labor



required to strip the ends of insulated, enameled, stranded and single conductor wire. It is stated that duplex cord can also be stripped in much shorter time with this machine. It is equipped with either single-phase, 110-volt, 60-cycle alternating motor, or 110-volt direct current motor as desired.

BALL BEARING MOTOR GRINDER.

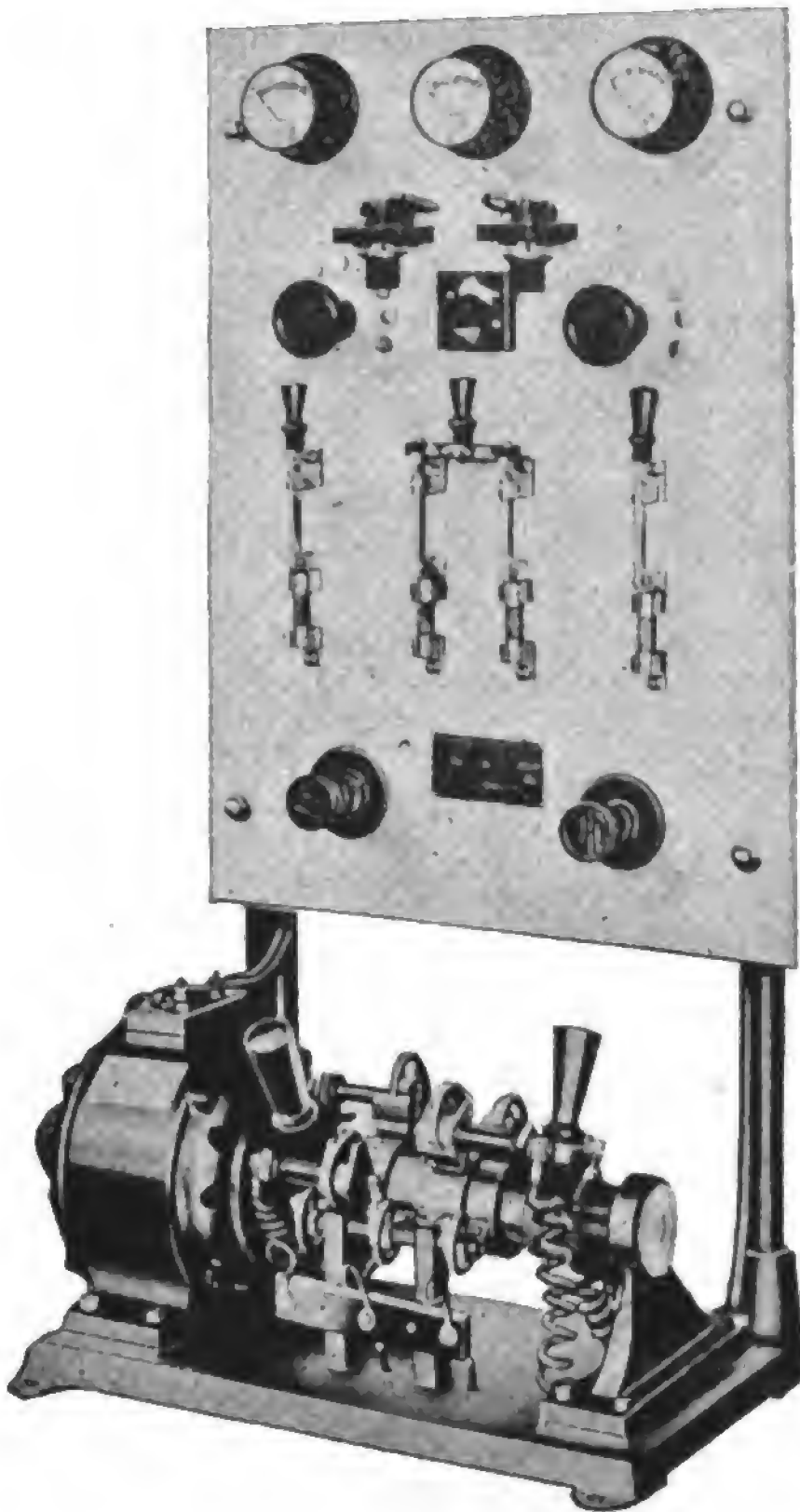
Hobart Brothers, Troy, N. Y., manufacture a motor driven ball bearing grinder designed for service station equipment. The grinder has new features, chief among which is the main ball bearings which minimize the operating expense. The tool is designed for heavy duty, such as buffing, grinding castings,



sharpening tools and similar work. It is strongly constructed to stand the heaviest continuous work. The sturdy base and ball bearings insure freedom from vibration. The bearings require lubrication once in three months. The machine is claimed to be much more convenient for the operator than a belt driven machine.

MOTOR RECTIFIER.

A motor rectifier that has new principles of design and construction is manufactured by the Advance Electric Co., 131 East Sixth street, Los Angeles, Cal. It is adapted for service stations in general and consists of a one-eighth horsepower motor "special type," fitted with an extended shaft, upon which are mounted three collector rings and two special commutators (as a unit), which absorb the alternating current from a transformer, as a three-wire circuit, and

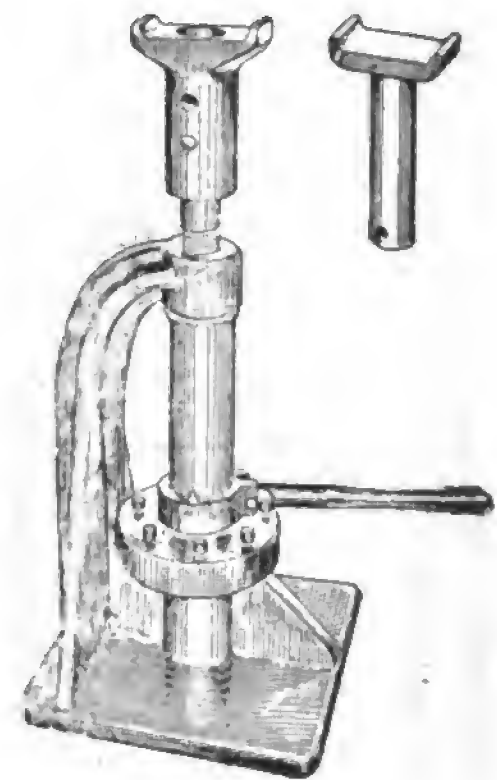


directly converts the alternating current into a direct current to two separately controlled circuits, in graduated voltages of 22-volt steps to 110 volts and normal capacity of one kilowatt a circuit, or 10 amperes at 110 volts. The total output of the rectifier delivering direct current is two kilowatts.

The rectifier is fully warranted by the manufacturer to be fool proof, who will make good during a period of one year from date of purchase any part that proves defective.

SAFETY TRUCK REPAIR JACK.

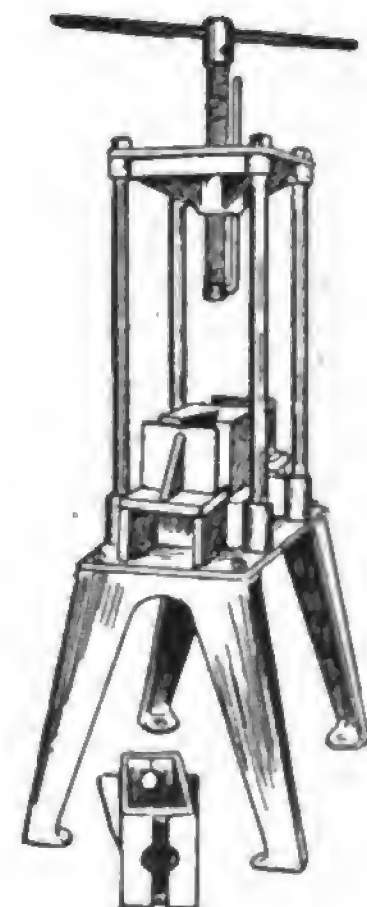
The Whitney Safety Truck Repair Jack, manufactured by the R. S. Whitney Manufacturing Co., 74 Nichols street, Lewiston, Me., is designed for truck service stations and repair shops handling heavy work. The jack is proportioned throughout to have great strength; the base is unusually large to insure a firm and rigid support for the lifted truck or



tractor and there is no probability of the vehicle working off from the jack. An extension head affords a lifting radius $7\frac{1}{4}$ inches higher than the regular lifting radius of 11 inches, or $18\frac{1}{4}$ inches total. The jack is manufactured in one size only, but is claimed to be adapted to all classes of work regardless of weight.

WHITNEY ARBOR PRESS.

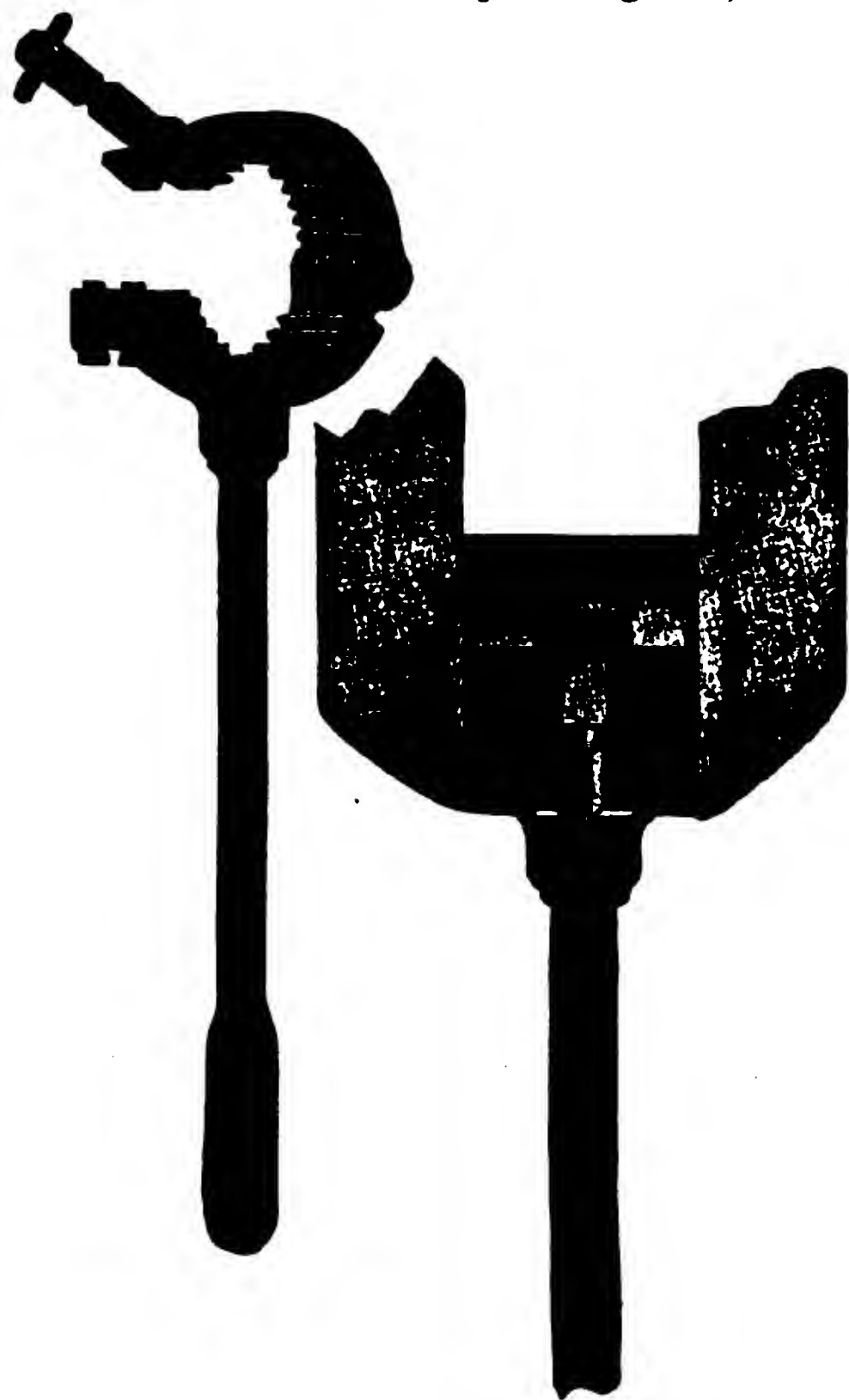
The R. S. Whitney Manufacturing Co., 74 Nichols street, Lewiston, Me., builds a special arbor press designed for truck service stations, with which a wide range of work, such as straightening, bending,



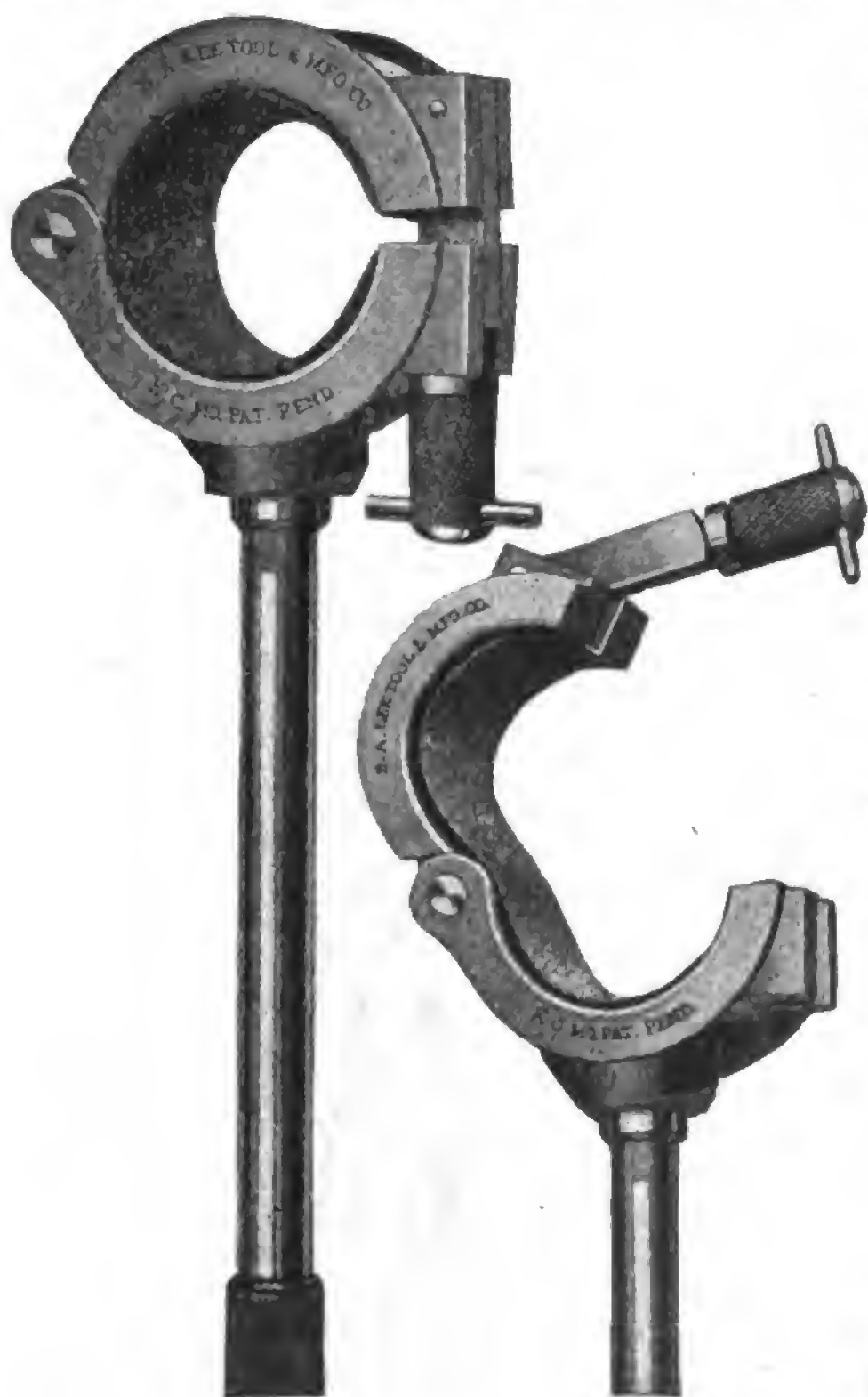
forcing gears from shafts, etc., may be done. The press is light in weight for its capacity. Both the head and base are substantially webbed and have large factors of safety. All parts are made so that work may be handled with ease.

NEW CRANKSHAFT REAMER.

The H. A. Lee Tool & Manufacturing Co., 1505-09 McGee Building, Kansas City, Mo., is now producing the Halee crankshaft reamer and polishing tool, de-



signed primarily for the service station repairer, to do work usually performed at a machine shop with a lathe. For average work but a few minutes time is



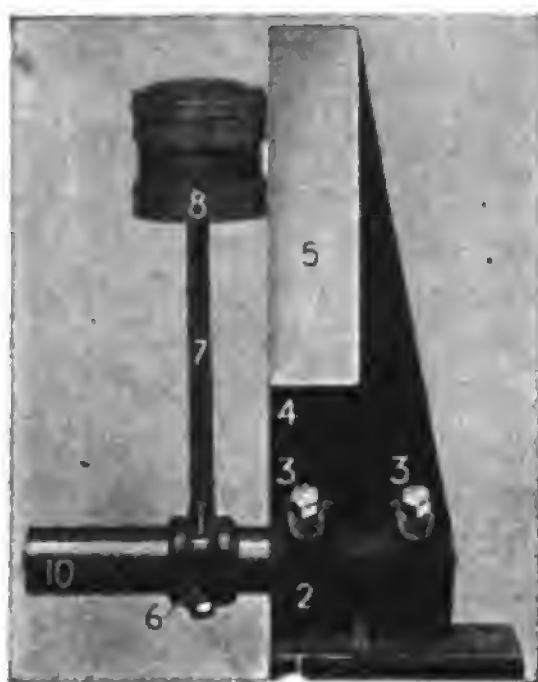
required to produce a first class job with this tool, which is claimed will be fully equal to that done on a lathe.

The tool is adapted for trueing crank-

shaft bearings, for removing the rough or high spots, and the repairer can obtain a perfect bearing fit in minimum time.

ALIGNING AND BEARING GAUGE.

Stevens & Co., 375 Broadway, N. Y., manufactures and sells a piston aligning and bearing fitting gauge designed for service station use, which insures precision when fitting and aligning connecting rod bearings, or wrist pin bushings and pistons.

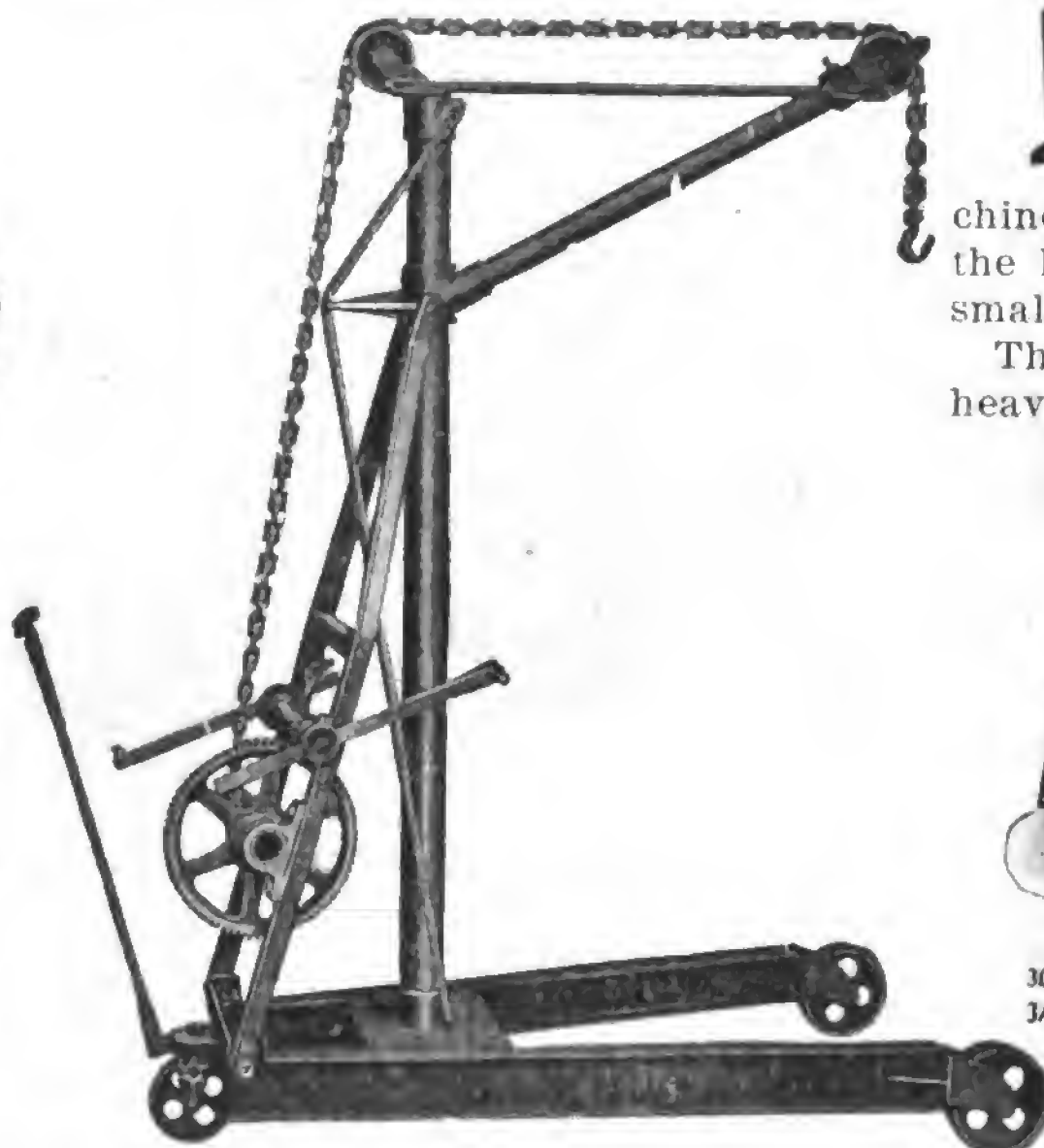


Easily understood directions accompany each aligning gauge, so that mechanics can efficiently use them. The gauges are machined to .0001 of an inch and are extremely accurate.

PORTABLE FLOOR CRANE.

A practical equipment for service stations and repair shops is the R-W Portable Floor Crane No. 365, manufactured by the Richards-Wilcox Manufacturing Co., Aurora, Ill.

It is especially adapted to lifting engines and other heavy units from cars and trucks, because of its high lift and long reach. The crane is built throughout of cast iron and steel, combined so



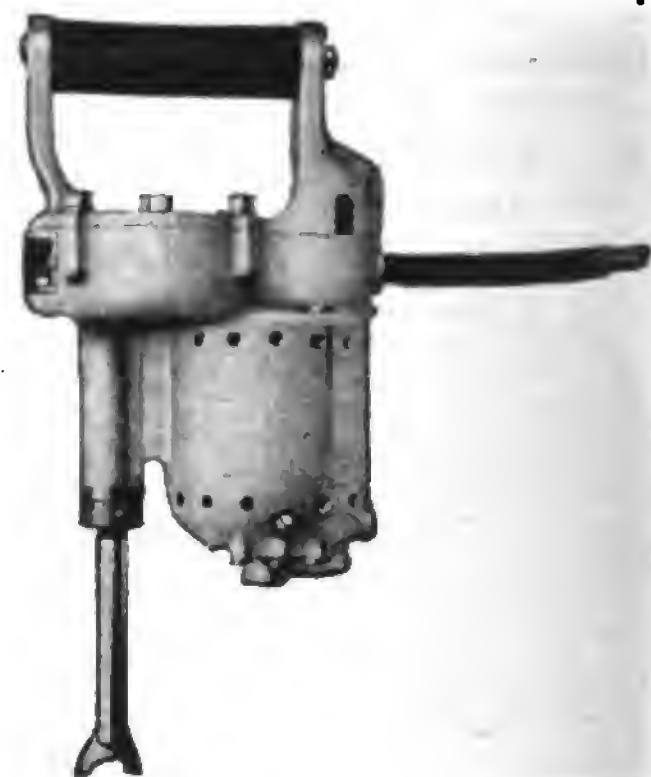
all heavy tensile and bending stresses are on the steel members.

The hoisting is by a chain, carried on pulleys at the ends of the masts, operated by a winch, backgeared to hand levers at the side members. The winch

may be stopped at any point and securely locked by a ratchet and cam, which can be instantly released to lower a unit.

VENTILATED VALVE GRINDER.

The Kalamazoo Railroad Supply Co., Kalamazoo, Mich., manufactures the Jackson No. 4 special ventilated valve grinder, operated by an electric motor, adapted either for alternating or direct

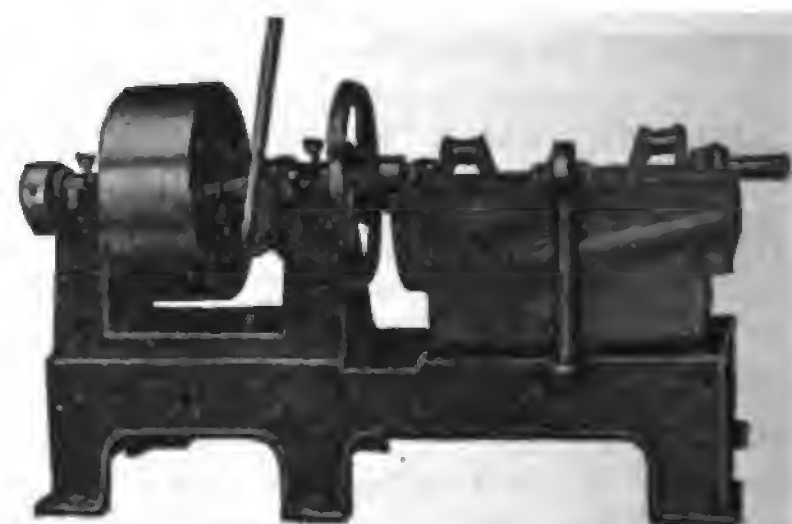


current at a full load rating of 75 watts.

This model, it is stated has been tested under the heavy grinding conditions, and in every instance it has proved to be a satisfactory tool.

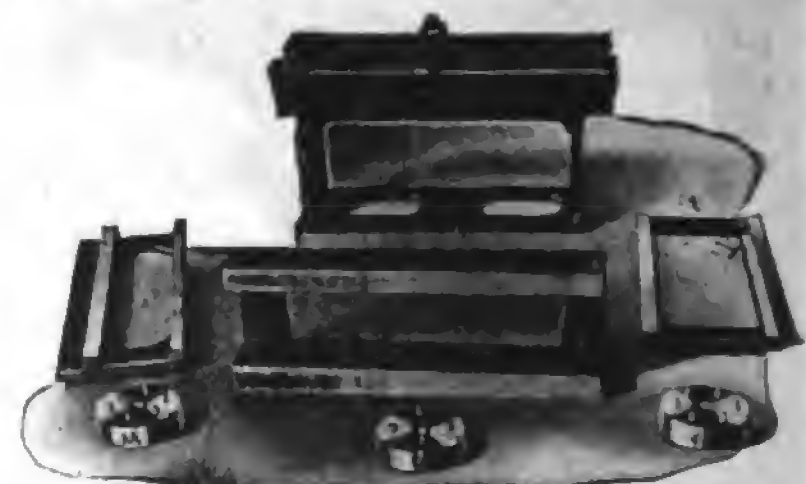
MACHINE FOR BURNING-IN BEARINGS.

The Service Products Co., Springfield, O., is building a new type Burning-In and Running-In machine for work on Ford and Fordson tractor engines. The ma-



chine is driven by a belt connected to the line shaft and can be used on many small engines built with separable head.

The model FS-50 unit is designed for heavy duty and the main shaft is high



1. Fordson & Model T Ford Running In Adapter.
3. Chevrolet 400 Running Block. 2. Model T Ford Running Block. 4. Dodge Running Block.
3A. " Adapter Disc. 2A. " Adapter Disc. 4A. " Adapter Disc.

grade steel, 2 1/4 inches in diameter. The bearings are nickel bronze and all wearing surfaces are hardened.

The FS-50 unit is equipped with burning-in adapters for Ford, Chevrolet, Dodge, Maxwell and Overland Four engines, while the main fittings are used for Fordson engines.



HALL TRUCKS

How, in the solution of Our Own Trucking Problems, Hall Trucks Have Given Better Transportation to All the World

THE reason Hall Trucks so admirably meet the transportation problems of modern business is a simple one.

As makers, handlers and transporters of heavy structural steel for more than forty-six years, this company had its own trucking problems.

None of the many trucks we had tried proved equal to the difficulties we had to meet. None lasted sufficiently long in our unceasing, heavy work.

So we decided to build our own trucks—transports capable of withstanding severe punishment over a period of many years.

And thus was born the Hall Truck five years ago.

As steel Analysts and manufacturers, Hall engineers knew the capabilities of truck strength and endurance. As truck users in the most difficult of truck usage, they knew the users' needs.

Hall Trucks, therefore, are designed and manufactured by men whose forty-six years' experience in the study of heavy transportation problems has peculiarly fitted them for the task of producing the world's most durable truck.

Hall Trucks have solved our overhauling difficulties. They have more than met the expectations of other users.

Business men find Hall Trucks lastingly dependable. Hall Trucks are serving hundreds of business men with marked ability and freedom of repairs.

It will pay you to look into the Hall lines and see why it is the foundation of so many high-grade hauling systems.

Address Department 11.

LEWIS-HALL MOTORS CORPORATION
Manufacturer of the Hall Trucks

As Manufactured by
The LEWIS-HALL IRON WORKS
DETROIT, MICHIGAN.

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

NEW DISTRIBUTORS AND AGENCIES

NEW CHICAGO KELLY BRANCH.

The Kelly-Springfield Truck Co. has secured a 20-year lease of the building at 2501 Michigan avenue, Chicago, formerly occupied by the Winton people. The opening of the new branch, which will care for the entire State of Illinois, eastern Iowa, southern Missouri and Wisconsin and northwestern Indiana, was under the personal direction of Sales Manager Frank R. Willis. Hoover Holton will be in charge of Chicago sales and H. S. Dunlavy, special representative in the middle western territory, will also use the Chicago office as his headquarters.

NEW NAPOLEON DISTRIBUTOR.

The Queen City Motor Co. has been organized with sales and show rooms at 4223 North Broad street, Philadelphia, to distribute Napoleon trucks in eastern Pennsylvania, southern New Jersey and Maryland. Frank G. Saunders is president. Before organizing the company Mr. Saunders visited the Napoleon plant at Traverse City, Mich., and his thorough investigation revealed such a promising outlook that he immediately embarked in the venture on a large scale.

NOT A STANDARD AGENT.

The Standard Motor Truck Co., Detroit, Mich., has issued a warning against a person traveling in the East who represents himself as selling Standard trucks and cars. He offers to do business on a consignment basis, which is not the Standard policy. Authorized Standard distributors and their representatives carry sufficient credentials to identify themselves.

GOODYEAR DIRIGIBLE TEST.

The Navy D-1, the huge dirigible built by the Goodyear Tire & Rubber Co. for the American navy, made its first flight July 13 at the Goodyear-Akron air station at Wingfoot lake, eight miles east of Akron.

NEW GARFORD BRANCH MAN.

The Garford Motor Truck Co., Lima, O., has appointed R. D. Dean manager of the Los Angeles factory branch covering southern California. He was formerly White representative in Kern county, California.

STEWARTS IN OREGON.

George M. Laffaw has taken the Oregon distribution for Stewart trucks. He was formerly sales manager of the Atterbury Truck Sales Co.

STELLING SELLING DENBYS.

The Litner Motor Sales Co., Milwaukee, Wis., distributor of the Denby truck, has engaged W. R. Stelling as sales manager.

R. I. TRUCK DISTRIBUTORS PLAN NEW QUARTERS.

The Federal Truck Sales Co. of Rhode Island has secured an adequate site on Reservoir avenue, Providence, and plans to erect the largest truck service station in the state.

The Paige Motor Car Co. of Rhode Island, distributor of Paige trucks and cars, has removed from 159 Broad street to temporary quarters near a handsome new home which is being erected on Elmwood avenue.

The Acason Motor Sales Co. of Rhode Island, now at 138 Randall street, is to have a handsome service station on Broad street.

The Messenger Motor Co., 150 Waterman street, has taken over the distribution of Denby trucks, formerly handled by the Wright Motor Sales Co. at the same address.

The Foss-Hughes Co., 206 Elmwood avenue, distributor of the Pierce-Arrow truck and car, the first automobile concern on that thoroughfare, will not be lonesome long, as three handsome new buildings are being erected on the avenue as distribution headquarters for cars and trucks.

TO DISTRIBUTE BUFFALO TRACTOR TRUCK IN EAST.

The Buffalo Truck & Tractor Co., Buffalo, N. Y., has signed Haskins Motor Vehicles, Inc., with headquarters, service and parts station at 304 West 52nd street, New York City, to distribute the Buffalo tractor-truck in the Metropolitan district, including the states of New Jersey and Connecticut.

NEW INDIANA QUARTERS.

The Indiana Truck Co., southwestern distributor for Indiana trucks, and a direct branch of the Indiana Truck Corporation of Indiana, has secured a new home in Kansas City, Mo. It now occupies the north half of the first floor of the Kirkwood building, 18th street and McGree road. J. O. Warner is manager.

REO TRUCK SERVICE.

The Hurley Motor Co., Philadelphia, will build a 15-story structure at Broad and Race streets for sales and office purposes in connection with the distribution of Reo passenger cars and trucks.

MACK PLANT IN BALTIMORE.

The International Motor Co., New York City, manufacturer of Mack trucks, is negotiating for the purchase of property in Baltimore, Md., on which to erect an assembly plant.

ALL-AMERICANS IN OKLAHOMA.

The All-American Truck Sales Co. has been formed at Guthrie, Okla., to distribute All-American trucks in that state. G. H. Gregory heads the concern.

NEW RIKER DISTRIBUTORS.

The Hare's Motors of New England, Boston, Mass., which is handling the Riker truck, in addition to the Locomobile, Mercer and Simplex passenger cars, has opened branches in Worcester and Providence and has also appointed dealers at Springfield, Fall River and Portland. Fred D. Trapp, former manager of the Packard branch at Springfield, is in charge at Worcester, and Louis F. Johnson, who has been in the trade for 16 years, is directing the Providence branch.

SOUTH A FIELD FOR TRUCKS.

The Oshkosh Motor Truck Manufacturing Co., Oshkosh, Wis., has added four salesmen to its staff in southern territory, Sales Manager Homer Hilton recently visiting that field and being impressed by the outlook for the truck industry in that section.

HERSEY SELLS SPRINGS.

The Jenkins Vulcan Spring Co., Richmond, Ind., manufacturer of replacement springs for cars and trucks, has engaged Dwight T. Hersey as sales manager. He was for several years assistant general sales manager of the Splittorf Electrical Co., Newark, N. J.

DISTRIBUTING THE DUPLEX.

The factory distribution of the Duplex four-wheel drive trucks has been taken over for 19 counties in the central part of Pennsylvania by the Overland-Harrisburg Co.

HIGHWAY TRAILER IN EAST.

The Highway Trailer Co., Edgerton, Wis., has appointed Anthony Kayser factory branch eastern representative, with headquarters at 238 S. 11th street, Philadelphia.

HUFFMANS IN CENTRAL OHIO.

The Sayre Motor Sales Co. has been organized at Columbus to distribute the Huffman line of cars and trucks in central Ohio. It is located at 594 North High street and is under the direct management of the incorporators, C. M. Price and E. P. Sayre.

REPUBLICS IN NORTHWEST.

The Stevens Corporation, Republic distributor at Minneapolis, has taken a 100-year lease of the site of the wrecked Y. M. C. A. building. This concern is to open a branch at Fargo, S. D.

NEW GRAHAM DISTRIBUTOR.

The Herford White Co., Milwaukee, Wis., has taken over the distribution of the Graham truck for Wisconsin and upper Michigan.

ROSS STEERING GEARS



Contented Drivers Mean Greater Efficiency from Man and Motor Truck

A heavy per cent. of the actual operation cost of a motor truck is represented by the salary of the man who drives it. This is a fact which must be considered both by the manufacturer or dealer who sells the truck and by the man who buys it.

All the time that the truck is running, the steering gear must be operated by the hands and the arms of the driver. Easy steering conserves human strength, makes a more contented driver, and means a bigger day's work more easily done.

Because their enormous bearing surfaces guarantee easy steering, safety and reliability, and thus increase efficiency, 165 motor truck manufacturers are now using Ross Steering Gears as standard equipment.

Write for further information

ROSS GEAR & TOOL COMPANY

790 HEATH ST., LAFAYETTE, INDIANA, U. S. A.

The Steering Gears that Predominate on Motor Trucks

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

New Motor Truck Accessories and Supplies

DEMOUNTABLE RIM TOOL.

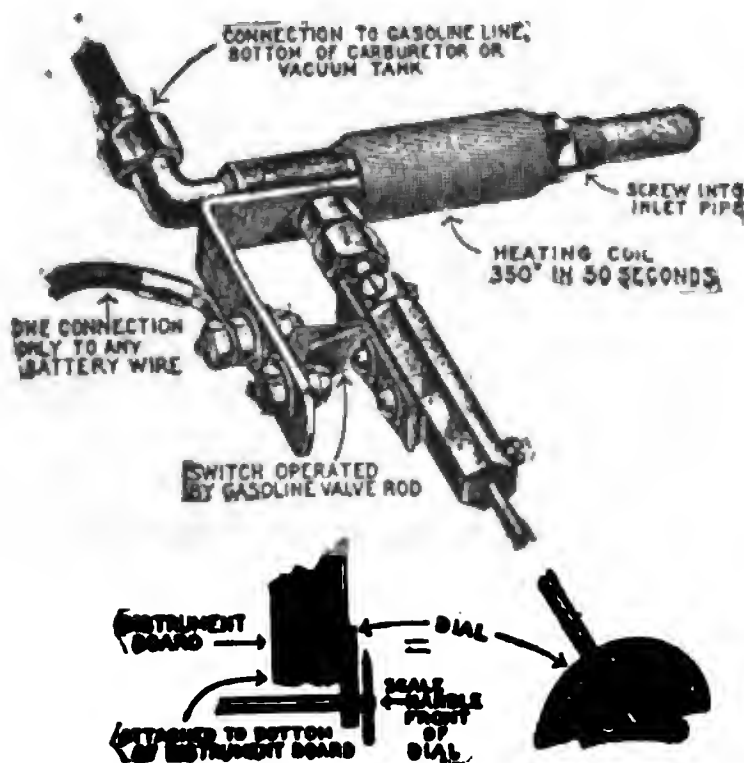
Trexler Co., 1418 Walnut street, Philadelphia, Pa., manufactures a tool for removing and replacing demountable rims known as Trex that is claimed to be especially useful and a distinct labor economizer. The tool is strongly made of malleable iron and is constructed in the form of a jack, having a similar prin-



ciple of operation. The stationary end of the device is hooked to fit over the edge of a rim, while a shoulder which fits inside the rim prevents the hook loosening on the rim edge. The sliding bar is adjustable for rims of differing diameters. A suitable handle is fitted at the middle by which the tool is operated.

ELECTRIC GAS PRIMER.

The New York Coke Co., 338-340 Pearl street, New York, N. Y., manufactures the Thermo Electric Gas Primer, a device equally adapted to trucks and passenger cars. It is installed inside the inlet manifold and delivers heated gasoline vapor to all cylinders. It will facilitate starting action in coldest winter temperatures.



The device consists of a brass chamber around which is wound a heating unit connected through a switch with the battery of the truck or car. When the electric connection is made the chamber will become heated to a temperature of 300 to 500 degrees in about a minute. Depressing the starter pedal opens a needle valve and the suction of the engine

creates a partial vacuum which draws the heated fuel mixture into the combustion chambers.

VELLUM SHEET PACKING.

The Fibre Finishing Co., 67 Milk street, Boston, Mass., is selling agent for Vellum Sheet Packing for gaskets where oil, water, gasoline or grease are used. The base is a strong vegetable fibre, chemically treated, and will stand tem-

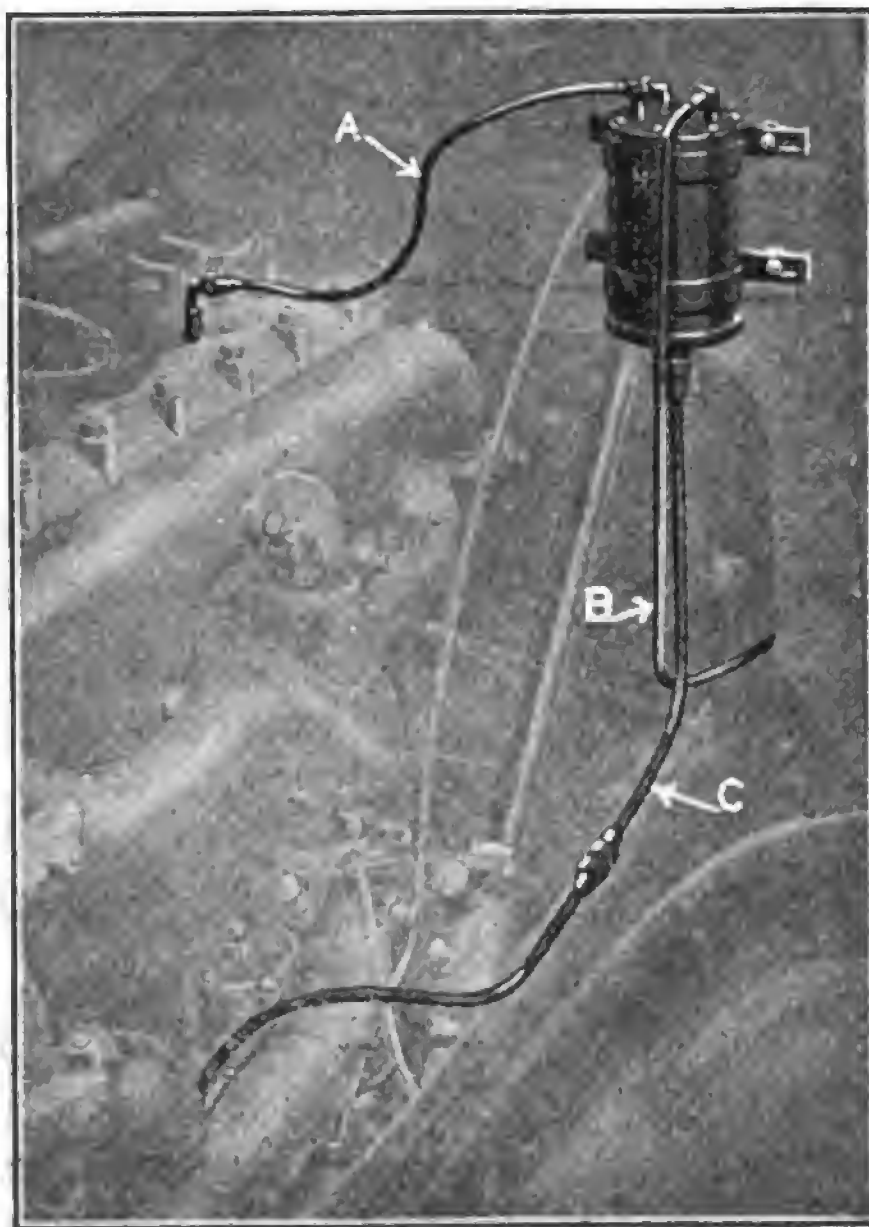


peratures up to 300 degrees Fahrenheit.

Vellumoid contains no rubber or rubber substitutes and no mineral matter. It is light weight, very flexible and has high tensile strength. Because of its compressibility it makes a particularly tight joint and its toughness insures durability.

SPARTON FUEL FEEDER.

The Sparks-Withington Co., Jackson, Mich., manufactures the Sparton Fuel Feeder, which operates on a different



principle than any fuel feeder. Pressure originating in compression in the en-

gine cylinders through pipe A operates a small spring actuated pump in the fuel tank, drawing gasoline from the main tank into the smaller tank through pipe B. A float actuated valve closes the compression line, stopping the flow of gasoline when the tank is filled and opening it again as the supply diminishes. Fuel is passed to the carburetor through pipe C. The device is small, occupies but little space on the dash, and is stated to be very efficient.

ALUMINUM ALLOY PISTONS.

The Green Engineering Co., Dayton, O., now makes aluminum alloy pistons, which are claimed to be much superior to cast iron pistons. One claim is that carbon will not accumulate on them as fast as on cast iron; another is that the



extreme light weight and toughness are essential qualities when speed is required. The pistons are manufactured for replacement purposes and are easily fitted by experienced mechanics to engines of modern make. The cost is not excessive and claim is made that the advantages more than offset the additional cost.

STARTER RING GEARS.

The Kent Auto Parts Co., 1743 Logan street, Denver, Col., manufactures a series of starter ring gears for replacement purposes on cars or trucks equipped with starting gears cast in the flywheel. The flywheels of engines on which gear teeth have broken can be turned and fitted with new steel ring gears at a moderate cost. The steel ring gears can replace cast gears, so there will be no probability of failure of the starter from defective or soft gearing.



$\frac{3}{4}$ - 1 - $1\frac{1}{2}$ - 2

RAINIER Worm Drive Trucks

Chassis Prices

Model R-11 - $\frac{3}{4}$ Ton . . .	\$1850
Model R-9 - 1 Ton . . .	2050
Model R-6 - $1\frac{1}{2}$ Ton . . .	2150
Model R-8 - 2 Ton . . .	2650

Specifications

Motor—Continental Red Seal.
Clutch and Transmission—Brown-Lipe.
Rear Axle—Timken and Sheldon worm and gear.
Carburetor—Zenith, with Stewart Vacuum system.
Ignition—Magneto.

Where any dealer can make the most money right now and from now on, he can easily see from the well known statistics that already as much as seventy-five per cent. of the country's hauling is being done on trucks of two tons and under.

$\frac{3}{4}$, 1, $1\frac{1}{2}$ and 2 ton—these are the Rainier sizes. With units that need no explanation—such as Continental Motor, Brown-Lipe Clutch and Transmission, Timken and Sheldon Worm Driven Rear Axle. With records of service in practically every line of modern business that will put the finishing touch on any possible sale.

Get in where the sales are quick, often and on the climb. Get in where profits stay profits—not knocked to pieces by replacements. Get in with Rainier—if your territory is still open.

*The Rainier is Built for Business by
the Pioneers of the Motor Industry.*

RAINIER MOTOR CORPORATION.

Sales Department,
225-227 West 58th Street, New York, N. Y.

Factory, Flushing, Long Island, N. Y.

Rainier

TRADE MARK REG.
WORM DRIVE TRUCKS

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

GATHERED FROM EVERY SOURCE

Acme Trucks Driven from Factory by Dealers for Distances Up to 1400 Miles

Unthought of a few years back drive-aways of 1000 miles and more are considered part of the daily routine at the factory of the Acme Motor Truck Co., Cadillac, Mich., which is keeping its dealers supplied despite strikes, embargoes, freight congestion and other transportation obstructions.

In the past few weeks Acme trucks have been driven from the Michigan factory to Boston, Newark, Baltimore, Atlanta, Louisville, Albany, Pittsburgh, Sharon, Pa., Greensboro, N. C., and other eastern and southern points, some of them 1400 miles away. Other trucks are leaving under their own power for the same points daily. In spite of rough going and other handicaps, breakdowns have been unknown and all the drive-aways have reached the port of delivery on schedule time.

One interesting trip was that of four trucks from Cadillac to the salesrooms of the Koplin Motor Sales Corporation, 486-8 Central avenue, Newark, N. J., Acme distributor in that city. These trucks covered 1200 miles with the necessary detours. They left Cadillac at 10 a. m. May 29 and reached Newark, June 9 at 7 p. m. One five-ton truck carried a 1½-ton truck and a 3½-tonner had a similar freight. J. F. Noonan was in charge.

The route taken by Mr. Noonan was via Jackson, Mich., Toledo, Cleveland, Youngstown, Pittsburgh and Philadelphia. The greatest distance covered in any one day was 150 miles, between Chambersburg and Philadelphia. Owing to a necessary detour off the Lincoln highway the Newark trucks went from Chambersburg to Harrisburg, Reading, thence to Philadelphia. The shortest distance covered any one day was slightly over 40 miles. This was in crossing the mountains in Pennsylvania. In the mountains it was necessary to stop at times to allow the motors to cool, but by no stretch of the imagination should this be construed as a faulty or unusual condition, as hundreds of pleasure cars of the multiple cylinder type passed the trucks or were seen by the wayside, the motors cooling.

Some unusually bad stretches of road were encountered on the trip, the detours running as high as 10 or 12 miles. Most of these detours were over plain, dirt roads, which after rain were in very bad condition.

RAILROADS CALL ON TRUCKS.

The traffic committees of the several railroads entering New Orleans recently broke a freight jam which had tied up 1200 freight cars and prevented 50 ships from loading by employing nearly 100 motor trucks to haul the freight to inland warehouses.

Fisk Rubber Co., to Erect New Building of 25 Stories as Centre for Its New York Business

The Fisk Rubber Co. has begun work on its new 25-story building in West 57th street, New York city, which will soon take its place among the notable structures in the metropolis. The estimated cost of land and buildings is \$7,500,000. The site has a frontage of 240.11 feet on West 57th street, 100.5 feet on Eighth avenue and 54.3 feet on Broadway. The new building will be ready for occupancy not later than March.

This building will be a striking addition to the permanency of the automobile business in the neighborhood of the Columbus Circle. It will be the tallest structure north of the Times square section, exceeding by five stories the United States Rubber Co. building, which towered above every other structure in that territory when erected several years ago.

Truck Equally Valuable for Local and Long Distance Hauls Belief of Veteran Hauler

The horse was all right in his day, but his day is done, is the view of S. Appel of Appel Bros., general truckers, New York city, who have been in business 22 years and who only replaced horses with trucks when they became too slow, too unreliable and too unefficient to cope with modern haulage methods.

Appel Bros. is particularly proud of a 3½-ton Selden truck, which has been used for all manner of unusual work. During the recent railroad strike it helped one of the firm's patrons to hold his trade by making a 336-mile drive with a cargo of meat to WilkesBarre, Pa. This five-day trip would naturally be beyond the power of horses. This truck regularly makes hauls of 50, 75 and 100 miles.

Mr. Appel says: "To illustrate the dif-



The 3½-Ton Selden Truck in the Service of Appel Bros., New York City, That Is Economical in All General Work, Either Short or Long Distance Hauls.

It will provide several thousand square feet of much-needed office space for the motor industry.

TRIANGLE CAPITAL DOUBLED.

The Triangle Truck Co., St. Louis, Mo., has increased its capital stock from \$200,000 to \$400,000 and distributed a 10 per cent. stock dividend. The company earned 12½ per cent. last year. The number of directors has been increased from seven to 15.

SHANK WITH OLDSMOBILE.

Benjamin Shank has resigned as representative of the Goodyear Tire & Rubber Co.'s Baltimore, Md., branch to affiliate with the Larson Oldsmobile Co., Philadelphia, Pa.

ference in speed, our Selden truck can make three deliveries a day from the freight terminals, to 150th street, a round trip of 16 miles. It takes one team a whole day to make this delivery. In other words, the truck does the work of three teams.

"Our 3½-ton Selden truck has traveled 4300 miles so far, with no repair charges, and a daily cost including all items of but \$22.37. This cost includes the overhead charges of our office, which is almost \$200 a month, so that the actual operating cost of the truck is but \$16 a day.

"We look upon our horses as old friends, who helped us build up our business, but they are no longer efficient for our work, even for short hauls."

The Goodyear Tire & Rubber Co.'s new plant at Los Angeles is in production.

\$4,000,000 worth of "mags" on order—and more orders every day



the white hot spark you want
when you want it—and every time

sparks

1. is "mag" ignition direct or indirect? *absolutely direct*
2. is "mag" ignition complicated? *simple as A B C*
3. why is the "juice" white hot? *"mags" are made to make it white hot*
4. why did Gen. Pershing cable for "mags"? *he knew what to depend on*
5. did the General's own car have a "mag"? *sure as you're born*

(to be continued)

thousands and thousands of "mags"—and every one of them bought to deliver white hot "juice" all-day-every-day, up or down hill, high or low speed, Winter or Summer.

in other words, more orders than ever before come to Eisemann for—

the simplest, most economical, the one absolutely dependable form of ignition—ignition that lives as long as the engine.

"mags"—Eisemann "mags" to go on the engines of passenger cars, trucks, tractors, motor boats, stationary engines—

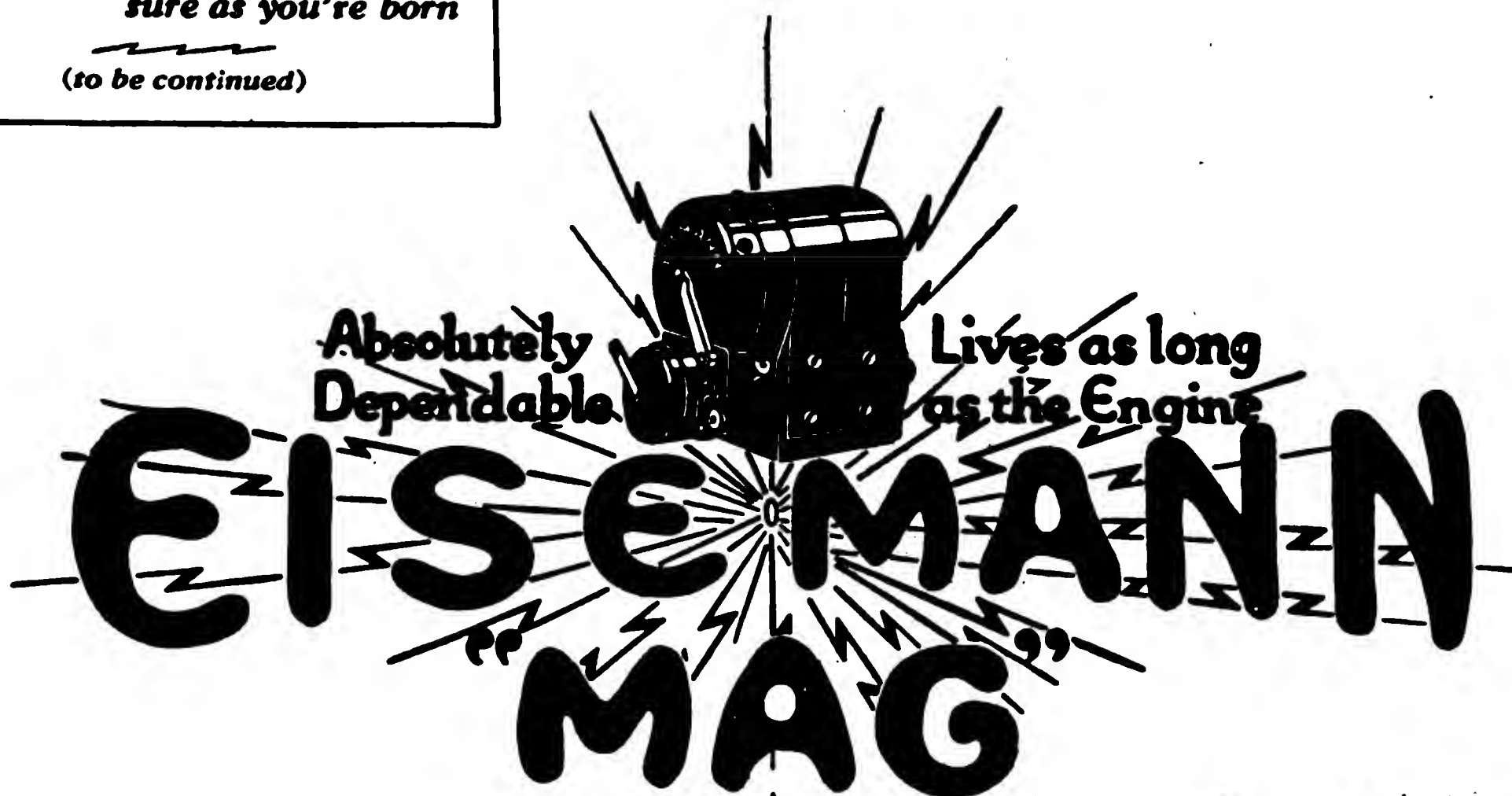
and the ignition is the *heart* of your engine.

you want ignition that *won't* lie down.

THE EISEMANN MAGNETO CORPORATION
32 Thirty-Third Street, Brooklyn, N. Y.

Detroit:
85 Willis Avenue, W.

Chicago:
1469 So. Michigan Avenue



C 1920

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

BUDA CO. ADVOCATES TRUCK FINANCING

WITH the object of presenting to bankers practical information of the actual economic value of highway transportation to the nation, the Buda Co., Harvey, Ill., by H. M. Sloan, treasurer, has addressed the following letter to a considerable number of the principal banks of the country.

The letter is primarily intended to place before banks facts which are not generally known or understood—that the prosperity of the nation's industry and commerce depends entirely upon the transportation facilities.

As the railroads cannot now for obvious reasons be extended, and road haulage is reasonably practical wherever necessary, there is every reason why the use of power trucks should be promoted. The possibilities of road transportation are in ratio to the willingness of capital to encourage and develop it:

Effect of Curtailed Credit.

"Based on our observations, there seems to be a growing tendency among the banks, especially the country banks, to curtail the credit of motor truck purchasers. This is in turn having its effect on the truck manufacturers, and through them on the parts manufacturers, of which this company is one. We believe this attitude is based largely, if not entirely, on a misconception of the importance of the truck to the economic life of the nation at the present time and

under the present conditions.

"The railroads which are operating under a very great strain need and will welcome immediate relief. It probably will be years before they are again in normal condition for handling traffic. Production is crying need of the day. It alone will bring down high cost of living. But production without transportation is of no real benefit to anyone. Anything that can be done, therefore, to relieve the present strain on the railroads and to get the food stuffs to the railroads is essential to the country's welfare. Nothing can do this to the same extent as the motor truck, in so far as short hauls are concerned. This has been amply demonstrated during the past few months, especially at the height of the switchmen's strike, although, of course the supply of trucks was entirely inadequate to meet the demand.

No Destructive Competition.

"No one will ever intimate that the motor truck can successfully handle the heavy tonnage, long haul business. That is the function of the railroad and that is where the railroad makes its money. Motor trucks are a valuable aid to the railroads, however, on the short hauls and on terminal transfers, as well as in bringing the food stuffs from the farm to shipping point. It is common knowledge that terminal facilities of the railroads are inadequate and anything that will lessen the traffic through congested terminals should and will be welcomed not only by the shipping and consuming public, but by the railroads themselves.

"A three-ton truck will haul practically as many tons and produce practically as many actual ton miles per day as the average 40-ton box car in L. C. L. merchandise service. The average merchandise car (not in peddler service) hauls probably not to exceed an average of seven tons, and travels an average of probably 25 miles per day, giving it an actual ton mileage of 175 per day. The so-called peddler car will not haul an average of more than four tons and produce an actual ton mileage of 100. A three-ton truck will travel on

an average, the country over, probably 45 miles per day and thus produce a ton mileage of say 135 per day, as compared with 100 ton miles for peddler car and 175 for the merchandise car, other than in peddler service.

Release of Cars a Large Factor.

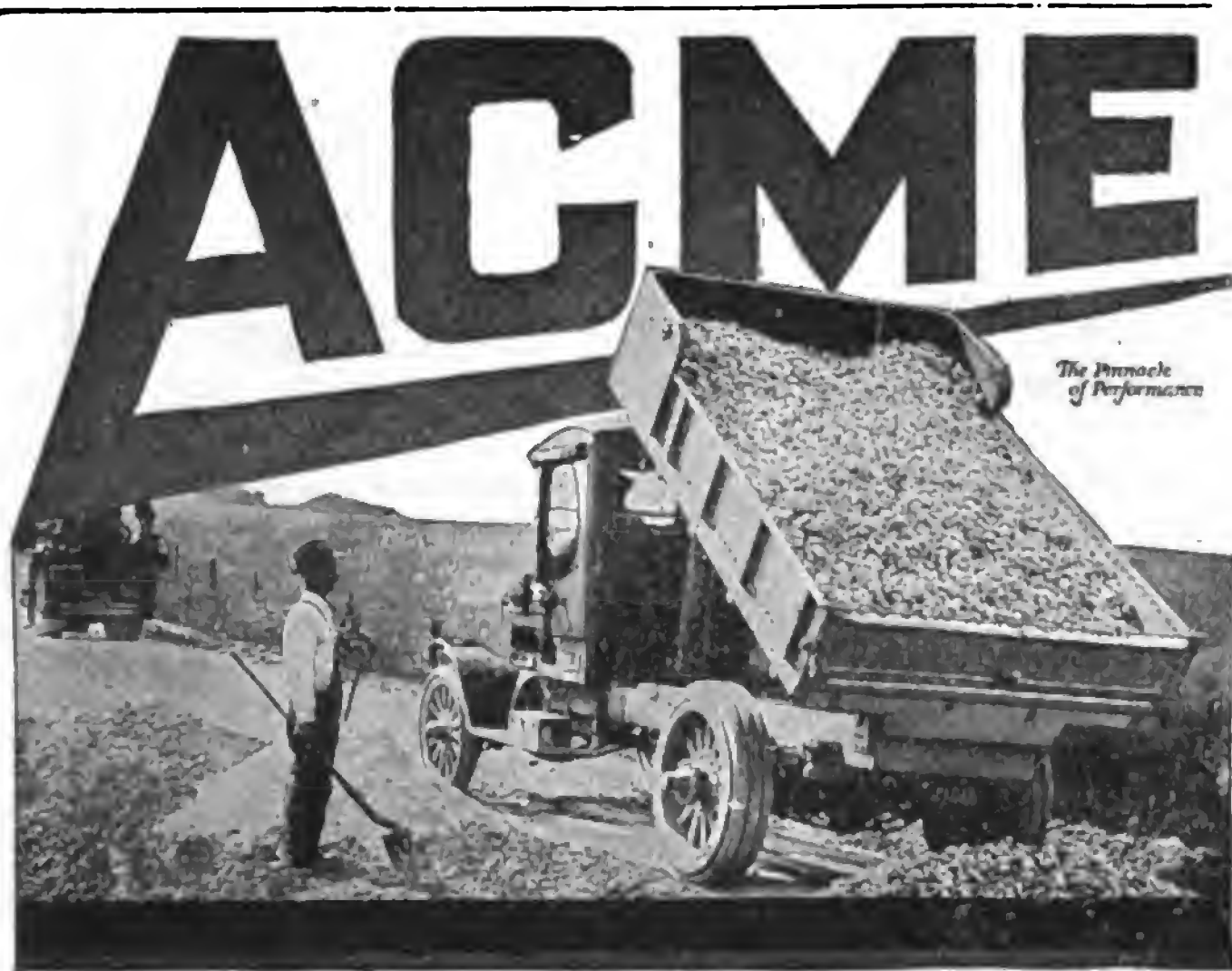
"Every merchandise car, peddler car, or terminal transfer car that is released from this unprofitable short haul service can be put into profitable long haul service by the railroads, thus doing a great deal to relieve the traffic congestion. The possibilities here readily can be seen when it is understood that approximately 25 per cent. of railroad freight cars are in merchandise service. The railroads today are suffering not only from the shortage but from lack of freight house labor. The situation in the latter respect is worse than it ever has been before. Motor truck delivery means store door delivery, thus eliminating the freight house labor problem as well as the drayage problems.

"This company outputs on an average 100 truck motors per day. It produces no motors for passenger cars. These motors will average three tons capacity. Therefore the daily output of this factory alone is 300 tons capacity. Based on the average merchandise loading this, with the other parts that go to make up the finished truck, is equivalent in capacity for L. C. L. merchandise business to an output of 43 box cars per day and the necessary power to handle them. The important fact in connection with the daily tonnage capacity produced by this company and represented by these 100 motors is that they can go any place for tonnage, while the freight car can only follow the rails. It is estimated by no less an authority than Herbert Hoover that 50 per cent. of the farm production of this country rots on the ground because of inability to get it to the market. The answer to this is good roads and motor trucks, and there is no way in which the building of good roads can be furthered as much as by demonstrating their possibilities with motor trucks on poor roads. There are \$70,000,000,000 invested in farms in the United States and the annual production is from \$12,000,000,000 to \$14,000,000,000—this representing only the portion saved. If only one-fifth of the amount now said to be wasted could be saved it would mean the addition of \$2,500,000,000 to our annual production.

Growth of Highway Transportation.

"One half as much tonnage was hauled in 1918 by motor truck as by the railroads. The percentage should be increased as the motor trucks have the use of 2,753,624 miles of highway (of which 296,290 are surfaced) as compared with 259,000 miles of railroad.

"It is a fact that where there are good hard surfaced roads the trucks handle practically all the merchandise business today. Fostering the truck industry will make this possible the country over and relieve the transportation systems."



Builds Business Quickly

There is a definite reason why Acme trucks head the list as the quickest sellers. Acme represents the known superior units in the motor truck field.

For Acme, without consideration of cost, incorporates such well known units as Continental motors, Timken axles, Timken bearings and worm drive, Ross steering gear, Cotta transmission, with gears always in mesh, and other units of equal grade, correctly assembled in a well-balanced truck.

Built in 1, 1½, 2, 3½ and 5 ton models

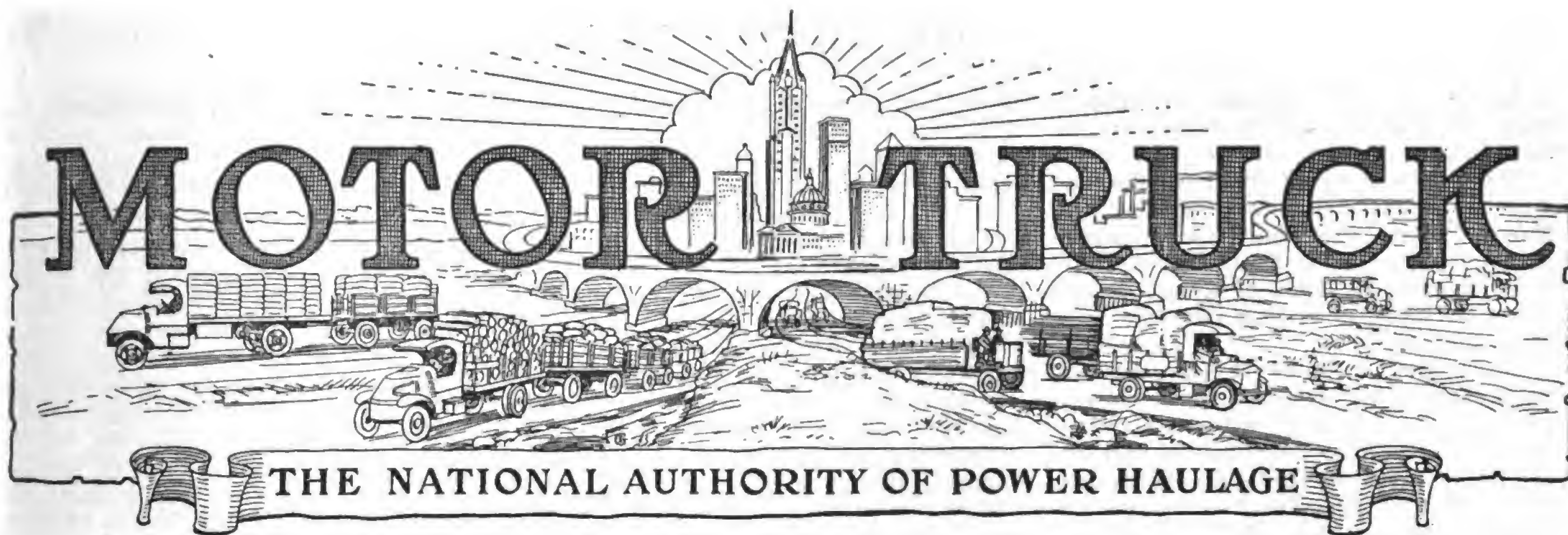
Write for our book, "Pointers to Profits," and ask for our sales building plan for dealers. Address Dept. 160.

The Seal of Dependable Performance



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ACME MOTOR TRUCK COMPANY, CADILLAC, MICH.



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PAWTUCKET, R. I.

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TRUCKS MINIMIZE LABOR IN MINE-TO-CONSUMER COAL DISTRIBUTION

MACHINE OPERATIONS AND WELL TRAINED ORGANIZATION, DEVELOPED TO MEET CONDITIONS, OBTAIN LARGE ECONOMIES AT IN-LAND PLANT OF PHILIP FOGARTY & SON.

A HIGHLY-PAID transportation efficiency man has justified himself from the viewpoint of both production and economy with Philip Fogarty & Son, coal and wood dealer, in the Olneyville section of Providence, R. I., although the concern operates but nine trucks.

Mr. Efficiency Man is the foundation on which has been built a decidedly rare genius in the business world, a coal company which never breaks a promise. As a matter of fact this organization comes as close as the realms of possibility allow to a coal company with a soul.

The order slate of Philip Fogarty & Sons is rubbed clean before the sun sets each day. Nothing is left until tomorrow which can be done today. If there is a sudden rush in the call for coal, one, two, four, six or more trucks are hired from truck men to make the deliveries

immediately. If a customer is told that he or she will get any given coal this morning it is delivered that morning. If the statement fixes any other part of the day, that is the time when it will get there.

Mr. Efficiency Man and his trucks are mainly responsible for quick deliveries and creating a service that can be depended on to the minute. Wagon loaders, special bodies and loading platforms and other facilities are necessary adjuncts of the system. All are coordinated effectively by the transportation expert, who has been on the job for seven years and without these the company would be far from being well equipped.

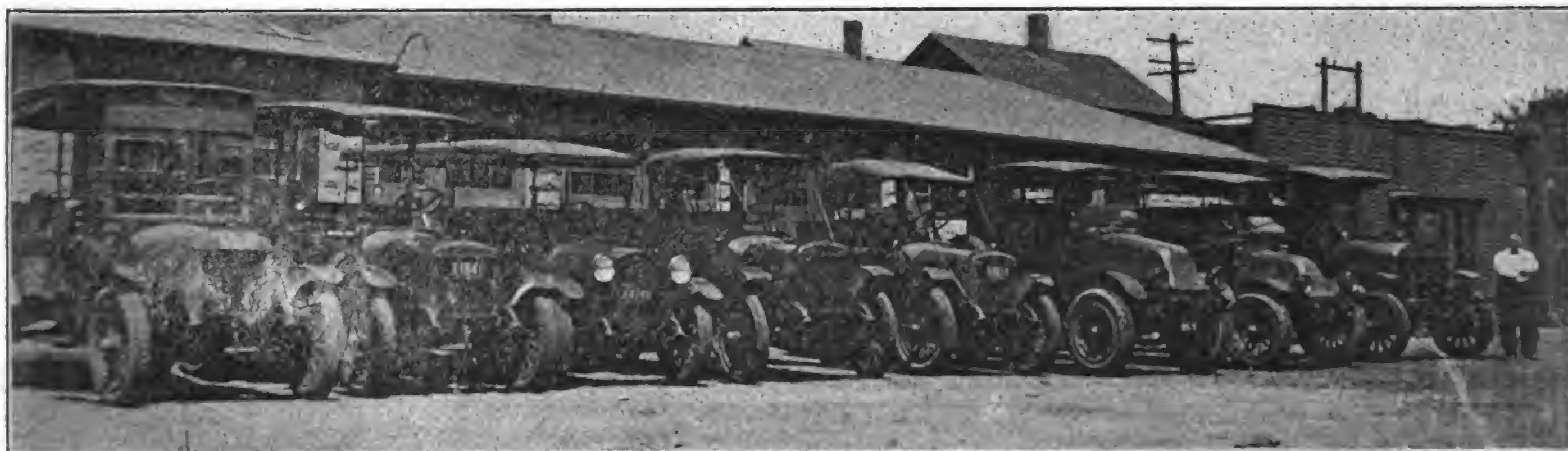
The Fogarty company does not keep cost records and the employment of a skilled transportation man is thought to more than compensate for this oversight. It is felt that the presence of the ef-

ficiency expert makes the keeping of cost figures unnecessary. While these records might well guide him in his work he gets the same results by constant application to his duties. He has by care and study devised many time and labor economies.

Not a gill of gasoline or oil is wasted. Not a moment of time is lost. Every truck in service, barring one reserve vehicle, is worked to its maximum capacity. The 35 men in the company's employ have energy and loyalty in full measure. There are no idle moments. No lost power by either man or machine. What more could cost records do?

Beats Cost Records?

The transportation expert simply reaches the results at which cost figures aim in another way. It proves a more costly route, but the Fogarty concern puts rapid service above all else but the quality of its product. It maintains that



The Fleet of Trucks of Different Makes and Capacities Used for Delivery of Anthracite Coal in a Large Operating Zone by Philip Fogarty & Son, Olneyville, R. I., in Whose Yard High Efficiency Methods Are Unusually Perfected.

It has saved money through engaging a man who knows scientific transportation to direct its delivery service.

This policy is based on knowledge and experience and is in sharp contrast with those of many men who have big capital investments in truck fleets who hesitate to give even an hour of a girl clerk's time each day to finding out just what truck haulage costs.

The Fogarty company knows that the trucks are being operated at the lowest possible cost consistent with its standard of service. It knows no class of delivery is faster. It is satisfied that the system with which it operates its machines is the best thus far devised.

Trucks for Short Hauls.

Philip Fogarty & Sons would as well think of going out of business as go back to the use of horses and inefficiency. This concern does not work horses even for short hauls. In the yards trucks are used. The officials estimate that it would require at least 40 horses to do the work done with its fleet of trucks, although most of the machines are comparatively small. They are equally certain that animal work would not be comparable with the results with the trucks.

Yet one horse is kept by the firm. The animal was bought soon after the company began business. Because of sentiment the horse is kept and is worked only to afford it necessary exercise, for the work that can be done with one animal is hardly worth considering.

Fleet of Nine Trucks.

The company's equipment consists of a five-ton Pierce-Arrow, a 2½-ton, a two-ton and three one-ton Republic trucks, a two-ton and a 1½-ton International and a Reo speedwagon. The latter is used almost entirely for emergency work. If someone wants a ton or a ton and a half

of coal and wants it quick the Reo is used for that delivery. The Pierce-Arrow truck is used exclusively for hauling soft coal to mills and the 2½-ton Republic truck is also used for this work much of the time. These two trucks have dump bodies. All the other vehicles have express bodies especially adapted for the coal business.

Like other coal concerns, the Fogarty company has found that its truck service is quick, that it expedites delivery, hauls heavier loads, is not limited by distance, is elastic and is least influenced by climatic conditions. In winter when the shipments are small and householders' needs are urgent the truck can be utilized even continuously, while animals would be at the lowest ratio of value.

Worked Every Day in Winter.

It is interesting to note that during the past winter, the worst in at least a half century, there was not a day when the Fogarty trucks did not make deliveries. The loads were reduced, the trucks were not worked continuously and there were delays, but deliveries were made throughout the snowbound period. The truck service was far better than was believed possible, and Mr. Fogarty characterized it as "extraordinary."

The motor truck will average for haulage five times the daily tonnage a horse can haul. The increase in tonnage and mileage through use of trucks has increased the Fogarty business to proportions little dreamed of. The section of the city where the firm is located has had rapid growth. The company's business has kept pace with this increase and it also extended its operating zone.

In addition to delivering fuel to mills and to family trade in most of the contiguous territory with the trucks, the concern has developed a splendid business in

the communities along Narragansett bay. At Conimicut, Oakland Beach and Rocky Point hundreds of tons of coal are delivered. These points are from eight to 10 miles from the company's yards.

Delivers to Shore Resorts.

One result of this work that appeals to the management is the improvement in morale among the drivers from making these deliveries. When Old Sol beats down mercilessly on the millionaire and the coal driver alike, the former picks out a shady spot near the sea. So does the latter when he pilots a Fogarty bus.

On hottest days it was a habit with some of the drivers to "knock off" work at noon. Now when the sun 'develops a case of heat idleness the transportation manager announces his regrets, stating in the same breath that he had routed that driver to Oakland beach or some other shore resort with a delivery or two in the afternoon. Mr. Driver immediately changes his mind about loafing for the rest of the day.

First Truck in 1912.

Philip Fogarty & Sons got the first "one-lunged" Reo truck that came to Rhode Island. This was in 1912. Two years later the company's power hauling equipment was increased 100 per cent. when the little Reo was traded in for a 1½-ton chain drive machine. In 1916 the firm purchased five Republic trucks at one time and has had a fleet operating ever since.

The company is under contract to deliver a constant supply of soft coal to four large textile mills. The Pierce-Arrow truck, which averages 5½ tons to a load, and the 2½-ton Republic truck, which carries 3½ tons, deliver at least 1000 tons a month to these mills. Ordinarily these deliveries can be made with the Pierce-Arrow truck, but when there



The Anthracite Bunker in the Yard of Philip Fogarty & Son in Which Eight Sizes or Grades of Coal Are Stored, Being Elevated from Cars on Spur Tracks and Distributed to the Pockets by Power, and Discharged Into Sacks or Trucks by Gravity. The Labor Is Confined to Operating the Machines and Handling the Sacks.



International Trucks with Two Types of Bodies, Unusual for Coal Delivery, but Used with Exceptional Efficiency with the Fogarty Plan of Distribution.

has been a lull in shipments and the mill bins get low the two trucks are necessary for this work. These dump-body trucks have chutes in the rear for loading and unloading.

Side Doors in Bodies.

The express body trucks have 30-inch side doors through which 90 per cent. of house deliveries are made. The hard coal is packed in 100-pound sacks. These express bodies have flare boards on the sides and because coal for retail stores is hauled in paper bags and kindling wood and bag wood are also carried, each has a four or six-post top for the protection of the bags. Coal in paper bags of 18-pound capacity is delivered to 400 stores.

Many streets where coal is delivered are narrow; in fact, most highways are not streets, but lanes and alleys. There is often no room to back a truck to the sidewalk. The side door trucks can be located at the curbs and the bags pushed out to the helpers on the sidewalk, who dump them through windows or carry them into the cellars and put the coal in bins, or perhaps carry them to upper floors.

One driver and three helpers man the two bigger trucks and two helpers are on the smaller machines. The one-ton trucks and the Reo each haul a ton and a half of coal handily and the 1½ and two-ton vehicles usually haul three tons each.

The speed of the trucks, which makes for rapid service and builds business, has

been increased by the use of pneumatic tires, but the Pierce-Arrow and the 2½ and two-ton Republic trucks are still on solids. The two-ton International trucks have pneumatic tires in front. All the other trucks have them all around.

Speed isn't the most important result from pneumatic tires, as the company's experience shows. The saving of the trucks mechanically is their best virtue. Several times before the small machines were shod with the pneumatics rear axles broke, always from the jolting resulting from driving unloaded over rough roads. Not an axle has broken nor has there been one case of "rear-end" failure with any of the trucks since the pneumatic tires have been used.

Repairs Made on Sundays.

In addition to a trained transportation man the company has a mechanic who does most of his hard work Saturday afternoons and Sundays. The drivers are not allowed to adjust or repair the machines except in an emergency. Most of them know the principles of truck construction and when a vehicle becomes inoperative they can usually mix swear words and a limited mechanical knowledge into a formula for getting it started.

The mechanic does all the greasing, oiling and repairing under ordinary conditions. For major repairs the trucks are sent to the service stations of the dealers who sold them. While on the job Saturday afternoons and Sundays the mechanic only puts in six days a week, tak-

ing off Monday or some other day of his choice instead.

Has Truck in Reserve.

One policy of the company that has proven productive is to always have a reserve truck. There have been infrequent instances when this has not been possible, but they have been few. This reserve truck is in readiness should any in use fail. This is insurance of the superior service at which the Fogarty company aims, regardless of expense. A truck may be making the most important delivery of the day. Fuel, on which industry and commerce must depend for its activities, may be vitally needed in either factory or store. If a truck is needed the reserve machine can be utilized immediately.

There are frequent periods when soft coal flow by railroad is halted.

During this interim the Pierce-Arrow truck is in reserve. The other dump truck is often reserved and nearly all get a turn sooner or later.

This reserve truck plan is carried out despite the fact that the company could well utilize two trucks more than the number that now comprises its fleet. The irregularity of shipments and deliveries is the explanation why these two additional trucks are not purchased. The management feels that there is more economy in hiring additional vehicles when necessary. When there is a rush even horses and teams are hired when enough trucks cannot be had.

At the other hand during the dull season the firm might make money by renting some of its trucks, but it has never done so. Not only is there the possibility of the machines being subjected to hard usage, but there might be unexpected need for them and were the service interrupted there would be corresponding loss of business prestige.

Order Slate Kept Clean.

Not only does the company keep its order slate clean, but this schedule is maintained without overtime, except at rare intervals. This applies to the executives and office employees as well as the drivers. The latter work from 7 a. m. to 5:30 p. m. five days and until 12 m. Saturdays. No bonus is paid. The men get a substantial wage, are satisfied and do satisfactory work.

The trucks are housed in a cement garage having five two-truck stalls. There is in this building a combined shop and



Seven of the Trucks and a Score of the Workers in the Fogarty Yard, Where All Deliveries Are Made to Schedule and Overtime Is Rare, Because of the Carefully Developed Operating System.



The Only Horse Owned by Fogarty & Son, Pensioned Because of Faithful Service, and Worked Only to Have Necessary Exercise.

stock room where repairs are made and where spare parts, tires and accessories are kept. A steel gasoline tank was built underground last fall with a capacity of 7700 gallons. With this storage facility the concern can take advantage of market conditions and buy when the price is right. The tank was filled last fall, trucks hauling the fuel from a tank car. The tank is far from empty today. To further improve this equipment pipes are being laid and the next gasoline shipment will be discharged direct from the railroad car into the tank.

The buildings to house the trucks are not large and this fact is cited in advocacy of the use of trucks. The housing of 40 or more horses and their equipment and vehicles would occupy a large share of the territory which is now advantageously utilized for storing coal.

All Coal Machine Handled.

The company's yard is in Atwood street and all the coal is received by railroad cars, loaded at the mines, and after it has been loosened and broken under ground and loaded into the cars that carry it to the shafts or to the surface, it is handled almost exclusively by machinery, so that the handling cost is minimized.

The coal is usually screened and sized and washed and put into storage bunkers by power operations and the cars are loaded by gravity. The cars are shunted from the New Haven tracks to the Fogarty yard on two spur tracks, these extending through a lofty shed at one end of the yard bunker. The outer track is highest. At the center of the end of the bunker a chute is built under the tracks at right angle to the rails. The chute inclines to a pit just inside the bunker and it is such an angle that coal will flow in it by gravity.

Cars Unloaded by Big Conveyor.

The cars are located on the tracks by switching engines, but they are moved to exact location with a block tackle and one of the trucks. The discharge chutes of the car or cars (for if loaded with the same grade of coal can be unloaded simultaneously) are located above the track chute. The car chutes are opened and then a big conveyor in the bunker is started. As the coal drops by gravity it reaches the bucket conveyor in the pit and is carried to the top of the bunker,

where it is carried to a belt conveyor that in turn distributes it to any one of the eight compartments of the bunker, each of which may contain a different grade of coal.

The cars contain from 35 to 70 tons and have from two to four discharge chutes. The cars are so built that comparatively little trimming is required to discharge them. The capacity of the conveyor is a ton a minute and with a sufficient number of cars to insure nearly continuous work a large tonnage can be handled in a day. From the bunkers the coal can be discharged in any tonnage and screened as it flows, into paper bags, sacks or trucks, as the order requires. The yard screenings are screened and sized into dust, buckwheat, pea and chestnut sizes so as to obtain the greatest commercial value and reduce shrinkage from handling. The handling and the screening is done by power. The value of the small coal is from \$3 to \$15 a ton.

Yard Piling and Loading.

None of the bituminous coal handled is stored in the yard bunker. Much of it is delivered direct from the cars to the mills. Some is, however, yard stored in piles for delivery to blacksmiths and concerns that use steam power. This coal is discharged from the cars by gravity and in turn is piled by a Link-Belt conveyor. In some instances the coal may be moved

and repiled by another conveyor.

When trucks are loaded from the coal piles a type K Link-Belt wagon loader is used, and with a crew of two men this will load a ton a minute. The same size crew operates a Converse wagon loader, used exclusively for transferring anthracite coal. The Converse machine will handle and screen coal at the rate of 20 tons an hour. So far as possible all manual work is done by crews, so that there shall be no retardation of the machine operations.

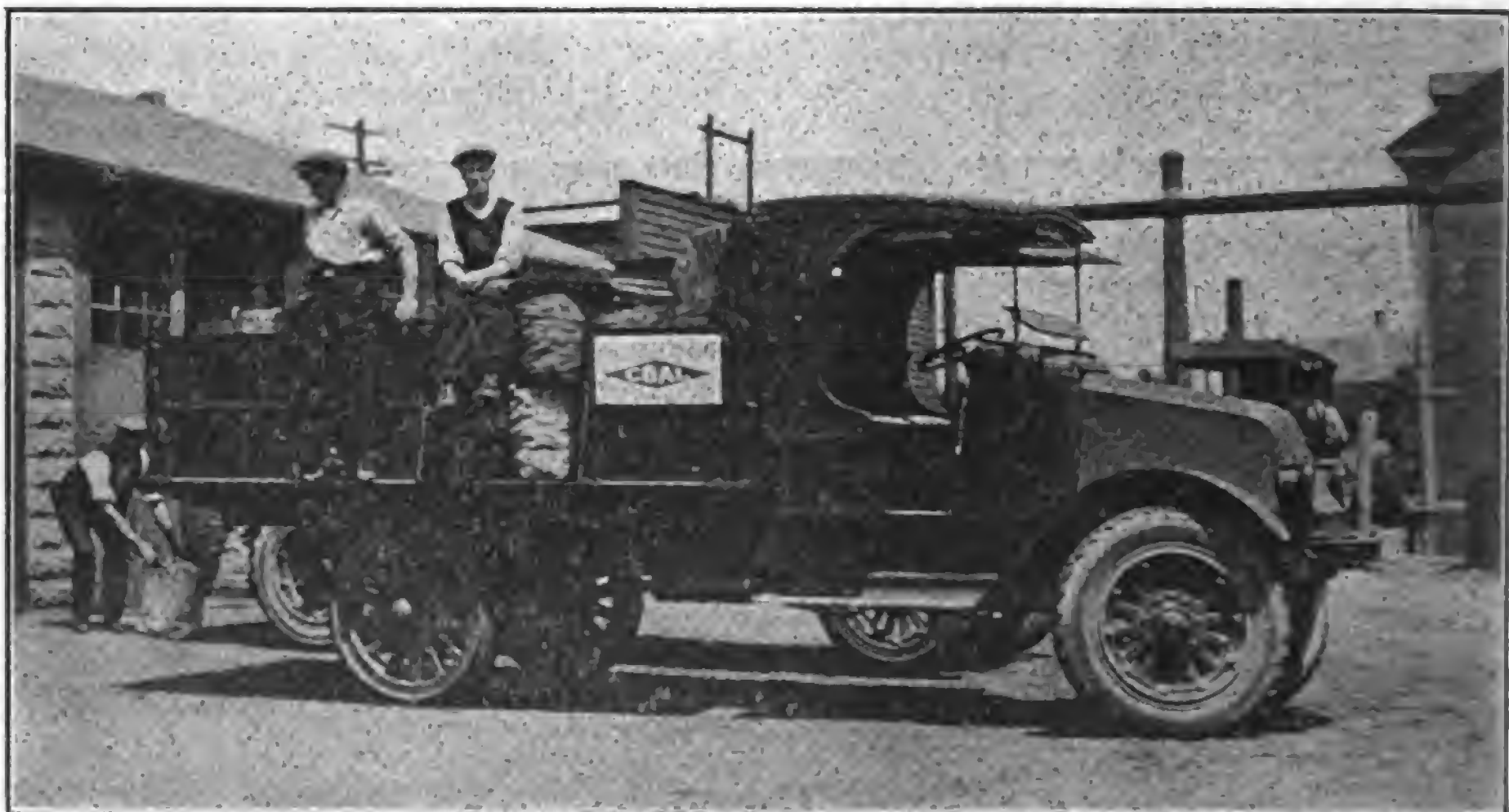
Each of the bunker bins has four chutes. As practically all the anthracite coal is handled in sacks, four men can work at once at any bin. The sacks hold approximately 100 pounds each. These are loaded on wheeled platforms the same height above the ground as the truck platforms and with a yard gang available any truck can be freighted in a very short period and with minimum labor.

There are also stationary platforms that are kept filled with sacked coal, so there is never reason for any truck waiting for a load. When the helpers are not with the trucks they load sacks. The time required for loading the largest truck is never in excess of 10 minutes, and generally much less. Preparedness for any order that may be received keeps the workers busy and insures the greatest productive time for the truck.

The trucks average from 40 to 50 miles a day, which is a remarkable mileage for the retail distribution of coal that is handled in sacks and rarely discharged by gravity.

CHICAGO FAVORS TRAILERS.

Trailers are favored in proposed amendments to the traffic ordinance in Chicago. The gross weight of truck and load allowed will be reduced from 40,000 to 30,000 pounds, except in the case of a combination of truck and semi-trailer when the limit will be 32,000 pounds, with not over 24,000 pounds on any one axle. The city engineer has expressed his approval of trailers, preferring to have loads spread over six or eight wheels rather than four.



A Fogarty Truck Loaded with Anthracite Coal in Sacks, Which Is Worked with a Crew of Three or Four Men. These Machines Are Driven from 40 to 60 Miles a Day.

HIGHWAY HAULAGE PROMOTION

EXPRESS RATES ADVANCE 12½ PER CENT.; TIRE MAKERS PLEA IS REJECTED

The Interstate Commerce Commission on Aug. 13 announced the granting to the express companies of an increase of 12.5 per cent. over existing rates. An increase of 25.16 per cent. had been requested, but the commission declined to authorize the larger advance on the ground that under present contracts, half of the sum would go to the railroads, which have already been cared for.

The increase does not cover the recent award of the Railroad Labor Board, raising the pay of express company employees, and the companies have asked permission to file an application for another rate increase to cover the wage increase.

According to the Railroad Labor Board the wage raise amounts to \$33,000,000. But the express companies assert that they will have to raise \$43,000,000 in order, under their present contracts, to cover the advance and conclude their agreements with the railroads.

The commission refused to grant the pleas of certain shippers who opposed the increased rates. These included shippers of bread, cake, frozen fish, live fish and laundry. The shippers of perishables said that the cost of living would be increased by higher rates. The laundrymen said the fact that laundry had to be shipped one way soiled and brought back clean resulted in a double rate in a business with a small profit.

Other shippers who said rates should be lower from "terminal to terminal" than when a wagon service, picking up and delivering shipments was included failed to make an impression on the commission. Nor did rubber tire manufacturers, who pleaded for special carload rate on their products. But the commission decided that rates on milk and cream might be equalized with those applied at the same time by railroads between the same points.

EASTERN ARKANSAS TOUR.

The Farm Development Bureau of the Memphis, Tenn., Chamber of Commerce and Motor Truck dealers of that city are planning a motorize-the-farm tour through eastern Arkansas from Sept. 13 to Sept. 18. It is intended to touch at Osceola, Blytheville, Jonesboro, Harrisburg, Wynne and intermediate points.

FARMERS COOPERATE IN BUYING TRUCKS TO DELIVER MILK.

Thirty-six Hempfield township farmers have formed a cooperative association in Pennsylvania and will secure trucks to distribute their product from a central depot at Greensburg. These farmers own milk cows producing 650 gallons daily.

GRAND RAPIDS TOUR ENDS.

A four days' farm demonstration and truck tour out of Grand Rapids, Mich., ended Aug. 6 after touching 25 towns and covering 202 miles. The efficiency of pneumatic tired trucks in the service of farmers and country merchants was one of the chief points stressed. Communities visited included Moline, Iona, Middleville, Hastings, Freeport, Alto, Lowell, Saranac, Big Rapids, Belding, Greenville, Lakeview, Mecosta, Fremont, Stanwood, Howard City, Croton Dam, Newaygo, Grant, Bailey, Gasnovia, Kent City and Sparta.

TRUCKS AT WISCONSIN FAIR.

The annual show of the Milwaukee Automotive Dealers' association in connection with the Wisconsin state fair, Aug. 30-Sept. 4, will be a combination truck and passenger car exhibit. The truck will be strongly featured. This show is a successful state-wide sales promotion event, the attendance of several hundred thousand coming from all parts of Wisconsin.

650 SHORT-LINE RAILROADS.

Investigation by the government with a view of ultimately using motor trucks for short freight hauls shows that there are 650 railroads in the country not exceeding 100 miles in length. Their total mileage is 16,000. Of these 417 are less than 25 miles and 160 less than 10 miles.

RAILROAD RATES INCREASE MAKES TRUCK HAULAGE MORE ECONOMICAL

The jump in railroad freight rates has opened a gap wide enough in the transportation scheme to allow the truck to drive through and take its permanent place as a regular unit of haulage.

The many interests which have regarded the truck only as a valuable asset in an emergency must now realize that the day of the truck has actually arrived and that the motor hauler must henceforth be regarded as a recognized factor in national distribution.

The increase in rates is also going to mean that the truck must be considered as an economical agency for comparatively long hauls. The truck operator is now able to quote figures for distance carrying which come mighty close to those charged by the railroads when the extra hauling to and from railroad terminals, extra crating, special packing and other incidentals to the railroad freightage are added to the cost column.

The direct and quicker service by the truck must be given due weight in these estimates.

Good highways would put the truck away out in front in the haulage stakes.

ONE-DAY EXPRESS SERVICES IN PENNSYLVANIA BY GOODYEAR TRUCKS

The Goodyear Tire & Rubber Co., branch at Philadelphia, which has been operating five long distance motor truck routes for a year, is to assure one-day express delivery service in every county of Pennsylvania by having the lines act as feeders to the trolley express service in counties near Philadelphia where poor roads will not allow trucks to make deliveries.

These lines now transport 500,000 pounds of merchandise a month, 70 per cent. of the Pennsylvania distribution. The service is being extended to care for 95 per cent. These lines run on train-like schedules, the vehicles, with their pneumatic equipment, averaging 18 miles an hour. Deliveries are made in one-third the time of railroad shipments. Added sales due to immediate delivery has made this service self-supporting.

The longest route is 340 miles, covering nine cities between Philadelphia and Reading. More than 40 communities are served on the three-day trip and the trucks are worked hard on the steep mountain grades. One-day trips of from 110 to 165 miles are made weekly to other cities as far away as Wilmington, Harrisburg and Allentown. A proposed line into northern Pennsylvania will cover 425 miles in four days. Another innovation will be the establishing of truckportation service bureaus in all new branch cities, giving hauling costs and road conditions as learned first hand by Goodyear drivers.

MAYOR FOR TRUCK TERMINAL.

Mayor Charles Fleming of Spokane, Wash., has the right idea. In a recent address he announced that were a motor truck terminal established where food-stuffs from the surrounding country might be delivered and sold at a price less than freight charges, a generous slice could be cut from the high cost of living for the people of that city.

HOUSTON TRUCK TERMINAL.

A motor truck terminal has been established at Houston, Tex., which will serve as a central depot for 11 ship-by-truck lines whose routes radiate in every direction from Houston. These trucks are carrying in farm produce, much of which would never reach the market were the growers dependent on other transportation.

PHILADELPHIA-N. Y. TRUCK LINE.

Child Bros., Darby, Pa., announces that it is organizing a motor truck service between Philadelphia and New York city and plans later to extend the service to Allentown.

WAGELESS DRIVERS BUILD BUSINESS FOR ICE CREAM MANUFACTURER

HAULING ice cream is a particularly sweet job for the truck drivers of the Dolbey Ice Cream Co., 485 Plainfield street, Providence, R. I.

This concern pays no salaries. Drivers get commissions and within the month one truck pilot drew down \$102.10 for a week's work.

A small sum is paid for each gallon of ice cream delivered and it's a safe bet that each driver keeps his nose to the grindstone and rolls up as big a delivery total as his physique and agility permits.

Drivers may hire a "striker" if they wish. When they feel that they can augment deliveries by getting a helper they are at perfect liberty to do so. That is their affair. This is one of the strongest features of the plan, the company thus being relieved of the worst phase of the labor problem. Hiring drivers is a simple task for this concern, there usually being a waiting list.

The Dolbey Co. has a fleet of 15 trucks and is mighty glad of it. The first truck was secured about a half dozen years ago and new ones have been added annually. The trucks now in service comprise two two-ton, two 1½ and two one-ton Internationals, a two-ton Packard and eight Reo Speedwagons. Five Internationals were added to the equipment within the past year.

Trucks Brought Business.

This truck fleet has been the bulwark on which the house of Dolbey has been built. Since the day of the truck the concern has grown from a small business making local deliveries only to an institution which has extended an arm as far as Newport, where a branch has been established, which is served daily from the Providence factory. Newport is 35 miles from Providence.

Today the business of the Dolbey Ice Cream Co. is limited only by the plant's capacity.

Sam Dolby, proprietor, states that there is an immediate call to open new fields which would require many more trucks than the 15 now in service. The cream for points in the northern end of the state where express delivery service is maintained is sent by express. There are many places in the state where the demand is strong, where there is no express delivery service and where the Dolbey trucks do not now serve.

This is also true of several points in the neighboring state of Massachusetts. Truck delivery to North and South Attleboro, for instance, would be highly profitable. Right now the production is not equal to supplying these sections. This is so despite the fact that a large new brick building was recently erected. While it was being constructed the business jumped at such a rate that the plant was outgrown almost before it was occupied. Additional construction is planned and will shortly be undertaken.

In addition to Newport, Pawtucket, Warren, Bristol and Riverside, are points where trucks now run daily and which

were outside the company's zone of operations before power haulage was engaged. The two-ton Packard truck goes to Newport daily with a full load, making the round trip of 70 miles readily and being back in the garage by the middle of the afternoon.

A two-ton International truck goes to Warren and Bristol every day and a 1½-ton International makes the Riverside trip daily, while several run to Pawtucket. The payment of commissions is so arranged that the drivers on long hauls have a chance to at least equalize the salaries of the men engaged in city delivery. As a matter of fact, in the week of Aug. 1, the pilot of the Warren-Bristol truck carried off the fattest pay envelope.

There are 12 regular routes, one truck being assigned to each. The driver of the Packard which goes to Newport and the driver of the two other trucks, which are used for local express and freight haulage, are on regular salary. In addition to operating between the factory and freight depots the two trucks are also called on for emergency hauls.

To Eliminate the Horse.

The company still uses six horses, with two two-horse and two single wagons. Quite often a truck not on a regular route is called on to deliver to the horse drawn vehicles. The driver finds that his load will not care for all his customers and telephones the office. The truck then takes the necessary quantity of cream and meets the wagon at a point agreed upon.

While the face of the returns appear to show economy in the use of the horse and wagon for the hauls nearer home, Mr. Dolbey is shortly to get rid of all his horse drawn equipment. How the horse figures as a money saver is here indicated.

The delivery of ice cream is no simple task. The truck or wagon is divided into two parts, or metal-lined boxes. One box contains cream and the other ice. Each delivery requires considerable detail and 15 minutes or more of time. The time to travel one certain route without stops would be one hour. The trip is now negotiated and the frequent deliveries made in between six and seven hours. Thus five or six hours of the journey are employed in the actual work of making the deliveries. There would be no economy in having a high price truck idle during this period every day.

Yet Mr. Dolby is going to eliminate the horse and make all deliveries by truck. He feels that he can double up the two routes now covered by the single teams and have one truck to do the job. He may even try to care for the four routes on which six horses are now used with two trucks. He is sure that he can do the trick with three and hopes that he will be able to make two serve.

While the ice cream industry is rapidly becoming an all-year-around business, it is seasonable to the extent that the

rush is far greater during the summer season. His horses are not needed in the winter time, but they answer the dinner call just the same. He will save the cost of feeding six horses this coming winter and every future winter and it will be considerable saving.

Drivers Have Short Day.

The Dolbey drivers work on Sundays and are glad to do so. Sundays and Saturdays are the two best days, with the former in the ascendancy. Despite the big salaries paid the drivers do not have long hours. Some start to work at 6 and others at 7 a. m. Their day ends from 2 to 4 p. m.

Those who engage helpers have full say as to whom they hire. Some times they get a man or boy for Sundays, some times for Saturdays and Sundays and a few have a "striker" during the entire week. Usually a sturdy boy, who will work hard for from \$10 to \$20 a week is secured. He is amenable only to the driver and Mr. Dolbey rarely knows who these assistants are.

Some Sample Salaries.

The smallest weekly salary paid any driver during the four weeks ending Aug. 6 was \$36.72. Then there was a \$42 and a \$42.50. They then ranged as follows: \$45.72, \$47.90, \$49, \$53.76, \$57.60, \$59.50, \$60.20, \$64.20, \$70, \$72, \$76, \$81 and \$102.10. Pretty fair pay, even in the year of our Lord 1920.

In the winter season some of the drivers must be laid off. The driver who has 20 customers in the summer season usually gets 30 or more during the winter, so that his salary is kept up to the summer standard.

The lull in the cold season also gives the company a chance to put its trucks in trim for the heavy business period. In the winter every truck is completely overhauled and painted. When the fleet starts out at the brink of the hot spell they are all in the pink of condition and primed to undertake any task.

The Dolbey Ice Cream Co. distributes its product to 200 stores in Providence and Pawtucket. Parties are taken care of and families are supplied when they come within the rule that no deliveries are made under three gallons.

Considerable more hauling would be necessary if the concern was forced to carry ice to its plant. Hauling, cutting, property investment, waste and other factors are eliminated, however, by the procedure of making artificial ice within the factory walls.

TEACHING COST SYSTEMS.

The Hi-Ways Transport association, of which many truckmen are members, is doing a good service in Toledo, O., by conducting classes in which cost systems are made clear, through which greater efficiency and profits may be achieved. This association recently formed a corporation which will operate a truck terminal in Toledo.

HIGHWAY TRANSPORT DEVELOPMENT

NEW YORK GIVEN EQUIPMENT FOR ROAD CONSTRUCTION WORTH MILLIONS

Excess war material and equipment for road building purposes valued at more than \$3,000,000 have been turned over to the State of New York by the War Department through the Bureau of Public Roads of the Department of Agriculture.

Included in the equipment are two Packard six-ton trucks, one Garford six-ton truck, two Garford five-ton trucks, 10 Hurlburt five-ton trucks, one five-ton Pierce-Arrow truck, five Packard four-ton trucks, three 3½-ton Selden trucks, 31 Kelly-Springfield 3½-ton trucks, five Atterbury 3½-ton trucks, two Gramm-Bernstein 3½-ton trucks, one Standard 3½-ton truck, 38 Peerless three-ton trucks, 133 heavy aviation three-ton trucks, 58 F. W. D. three-ton trucks, 177 Packard three-ton trucks, 24 International two-ton trucks, 32 Wilson two-ton trucks, 234 Nash-Quad two-ton trucks, 97 Pierce-Arrow two-ton trucks, 13 Federal two-ton trucks, five Standard two-ton trucks, two Auto Car two-ton trucks, one Republic two-ton truck, two Kelly-Springfield 1½-ton trucks, two Atterbury 1½-ton trucks, three light aviation 1½-ton trucks, 25 light aviation one-ton trucks, 18 GMC three-quarter-ton trucks, two Ford light delivery three-quarter-ton trucks and 33 Ford ambulances.

"As much of this equipment as could be effectively used in the work of this department has been retained," State Highway Commissioner Greene says, "and the balance has been distributed to the counties and to municipal units for use in road construction only. The result is that it has been of great benefit to the whole road system of the state and a benefit which will continue, as it will demonstrate the very effective and economical work which can be done with this kind of equipment and will establish a policy which will be continued."

The vital assistance given to the good roads movement throughout the country by this distribution of hundred of millions of dollars' worth of war material is one phase of a programme of constructive statesmanship, carefully planned and steadily carried forward during the last 10 years by the Southern Commercial Congress under the direction of Dr. Clarence J. Owens.

FRIEDMAN SNOW TANK BOUGHT BY NEW YORK CITY.

The Board of Estimate of the city of New York has authorized the purchase at a cost of \$20,000 of a Friedman Snow Tank, so-called, the snow-removal machine invented by Dr. Samuel Friedman of that city. This machine was tried out last winter with magnificent results. An account of its operations was contained in the July MOTOR TRUCK.

BESSEMER TRUCKS MAKE 60-DAY RELIABILITY RUN.

The Bessemer Motor Truck Co., Grove City, Pa., was all primed for the First National Motor Truck Reliability Contest due to be run out of Omaha in June and refused to accept the set back the indefinite postponement of that event caused. The Bessemer people just went right out and held a reliability contest of their own, proving to thousands of people between Grove City and Denver, Col., that the Bessemer internal gear truck holds a big block of reliability stock.

Two pneumatic tired Bessemer trucks, a 1½ and a 2½ tonner, made a cross-country trip to Denver and return, giving 60 days to the journey. Dealers were visited along the route and made more enthusiastic over the ability of the product they are distributing in such big volume. The trucks traveled in spite of rain or bad road conditions. Nothing was dodged. The trucks came through in amazing shape and demonstrated the efficiency of this equipment on long distance work.

W. B. Roberts, Jr., factory representative, and H. C. Shira made the journey. They spread the gospel of good roads along their pathway.

Experts estimate that this 60-day jaunt to Denver and return equals from the standpoint of wear what the ordinary business truck would be subjected to in a period of 12 months. If either of these trucks had depreciated in value as a result of the trip it was not discernible to the naked eye.

ARRESTS FOR OVERLOADING.

The state highway department's automobile inspectors and the state police of Pennsylvania are making a drive on overloaded trucks. Infractions of the law are reported to total 200 a day. New Jersey is also on the trail of violators in this state. These states are also enforcing the law regarding head lamps. Loads in Pennsylvania are now being limited to the overall figures specified by the manufacturers. Not only are drivers of overloaded vehicles fined, but the extra loads must be removed before the trucks are allowed to proceed.

NATIONAL COMMITTEE WILL DEVISE ECONOMIES FOR TRUCK HAULAGE

The permanent national committee on highway and highway transport showed that it means business by getting into action at a meeting in Pittsburgh, Pa., July 31. An educational programme was outlined in which leading educators and scientists of the country will take part. It is aimed to develop economies of highway travel to the same value as the principles which govern railroad transportation. The object is to promote a knowledge of vehicular transportation which is believed to be essential to the public good.

The general committee will conduct conferences with several of the leading universities. The committee on research will endeavor to coordinate efforts in highway and highway transport and automotive research.

The committee on vocational training and extension education is headed by Dr. W. K. Hatt, Purdue university, and will aim to devise methods for the extension of education regarding highway transport and automotive subjects in vocational schools and urge cooperation between state highway departments and university extension departments. Instruction will be given in summer in automotive factories, the workers being paid during the course. This campaign will be also carried on in elementary and high schools.

George C. Diehl heads this committee, the other members being Dr. C. D. Jarvis, Dr. F. F. Bunker and Dr. W. C. John of the Bureau of Education and R. C. Hargreaves of Detroit.

Pittsburgh university agreed to be a pioneer in this movement by sending out a "University on Wheels" this fall and winter. A completely equipped truck will visit garages in many communities for the purpose of a practical demonstration. A lecturer will explain the object of his visit and give lessons in truck operation and repair. Passenger cars and tractors will also be demonstrated. Factories will provide motion pictures.



The Bessemer Trucks That Made the 60-Day Reliability Tour on the Banks of the Mississippi River.

FRESH CONNECTICUT MILK INSURED RHODE ISLAND BY TRUCK SERVICE

MANY in the truck industry will differ with Manager Samuel F. Darling of the Providence Dairy Co. in his claim that horses are best for congested, house-to-house milk delivery, but there will be no dissenters to his declaration that for scattered routes, for collecting milk in the rural districts and for every phase of emergency work the truck is the peer of all transportation mediums.

The Providence Dairy Co. brings its milk to market by train. This is possibly the most convenient way in the special case of this company. There are many arguments why the truck is a more reliable and more sanitary unit for this work, however. The most potent of these is that they would ensure a dependable supply, which insurance the company lacks today.

Manager Darling is pronounced in his belief in truck utility, despite the discrepancy cited in the opening paragraph. For the Providence Dairy Co. and for the

produced the company is not obliged to do any grading or have any seconds. All the milk that now comes from the Providence headquarters is first grade, which brings a better price and gives better satisfaction, at the same time is a promoter of health for young and old.

At its Providence depot the concern has a two-ton International, a two-ton Hudford, with pneumatics in front, and a $\frac{3}{4}$ -ton International. The latter was bought in 1915. It was the company's first truck and it has given service beyond price. It is running today as merrily as at first. A Packard $6\frac{1}{2}$ -ton truck was recently ordered and is due any day.

Trucks Collect Supply.

At Willimantic, Conn., where the company has a weighing station, three two-ton Internationals are on the job and another two-ton truck is hired regularly. The oldest of the two-tonners in service has given splendid service and is to be

are byways and lanes over which the trucks travel that would be inaccessible to horse and wagon. Many farmers off the beaten trail are now sending milk to Providence who were out of bounds in the days when Dobbin and Nancy held sway. Cans formerly bespattered with mud now reach Willimantic spotless.

The trucks carry heavier loads and round up the supply much quicker than the horse drawn vehicles could do, this being their richest asset to the company. Platforms have been placed at many points along the route and here the farmers from each little district assemble their contributions.

The trucks travel during the cool periods of the day and only a wet canvas top is needed to protect the milk for the short time until the weighing station at Willimantic is reached. Trucks leave about 7 o'clock for the evening collections and are on their way long before daybreak to get the milk drawn in the morning, this latter supply being in Willimantic before the train leaves for Providence at 6:20. No attempt was made to get the morning's milk the same forenoon when horses were employed.

During the past winter, when nature flung great volume of snow at the universe and halted railroad and highway movements everywhere, the International trucks at Willimantic refused to stay put. The company hired help and the farmers the country around got their shovels busy, the result being that the flow of milk from the Connecticut supply zone to Providence was never stopped, although reduced in volume for brief spells. These trucks never missed a day.

Do Away with Sour Milk.

The trucks have brought even greater joy to the farmer than to the company. Sour milk is an unknown quantity in the area around Willimantic since the trucks have been gathering in the product almost as fast as the cows do their part. The milk is only on the farmer's hands an hour or two, being collected evening and morning as soon as it is "made." The night milk is thoroughly iced at the Willimantic weighing station, where 1200 tons of ice were placed this winter.

By order of the Interstate Commerce Commission cars used to carry milk are now iced by the railroad company. The Providence Dairy Co. gets two carloads of milk each day, one from Willimantic and one from Westerly, R. I. The company uses no trucks at Westerly. At that point the milk is brought in on trolley cars which traverse considerable farm country, and by the farmers themselves. In nine cases out of 10 the producers use small trucks for this work.

Even at Willimantic there are still a few of the agricultural workers who haul in their supply on the little trucks which they have found so practical on the farm. At Westerly four railroad workers put in a half hour of their off time under pay of the Providence concern in loading the



One of the Small Trucks Used for Supplying Wholesale Customers of the Providence Dairy Co., Covering a Number of Routes Daily.

public of the cities of Providence and Pawtucket the power hauler has proven its case by giving the children and the grown ups of those communities the same fresh milk that people of the country districts enjoy.

Through the advent of the truck customers of this company are served with milk drawn from the cow in the morning of the same day. None of the milk distributed is produced earlier than the night before.

When horses were used to collect from Connecticut farmers the milk delivered to Rhode Island patrons was "made" the previous morning, with some produced the night before. In this one way trucks have proven a profitable investment for the company and a boon to the public.

In the elimination of waste the truck has also been a money saver. Since these vehicles have been hurrying the milk to Willimantic so that the consumer has it on his table within 12 hours after it is

retired shortly to give way to two more two-tonners, which have been ordered for immediate delivery. With four trucks of its own at that point the company hopes to do away with renting outside vehicles.

The three trucks at Willimantic replaced 12 horses a few years ago. A far greater number of horses would be required to do the work the power wagons are doing now and, admittedly, they could not do it as well. The trucks have enabled the company to reach out until today these agencies are hitting points 10 miles from Willimantic, in fact, sweeping a radius to that distance around the Connecticut city. As a result farmers who were not visited in the old days are now disposing of their good milk to the Providence concern, which takes all that is offered.

The roads in this section are impossible. They are lined with ruts and rocks and a truck in this service leads a decidedly rough life. Manager Darling says there

assembled milk from platform trucks to the railroad car. Dairy company employees do this job at Willimantic.

A carload usually comprises from 800 to 1050 40-quart cans. Of this amount 15 tons is sent daily to the Pawtucket branch of the firm, which is $3\frac{1}{4}$ miles from Providence headquarters. This is all sent by truck, loads being at rated capacity. Manager Darling figures, however, that his new $6\frac{1}{2}$ -ton Packard will take this 15 tons in two loads, thus expediting this daily haulage.

No Dependable Supply.

Proof that the company is not getting a dependable supply today is shown by the figures of Aug. 10 and 11. On the former day 1450 cans were received, which is only an average of 825 to the car load, a minimum amount. On the 11th, however, only 1450 cans reached Providence. One result of this was apparent while a MOTOR TRUCK representative was a visitor at the Providence office. Manager Darling had agreed to help out a Fall River concern which had been running shy of its usual supply. When he found himself short-handed he naturally felt it his duty to care for his own customers and was forced to telephone the Massachusetts firm that he would be unable to help them out.

The trucks at Willimantic cover an unusual amount of ground and are obliged to make close connections. The truck bodies have side doors and other conveniences to facilitate quick loading, but there are bound to be delays, the farmers sometimes being a minute or two late or some other untoward incident putting the truck a trifle off its stride. Every minute counts. Trains do not wait. Consequently a full truck load of milk is apt to miss connections.

Trucks for Long Haul.

Here is where the truck booster gets in his car. He points out that if the trucks carried the milk direct to Providence such slips could not happen. Pneumatic tired two-ton trucks could make the distance of 58 miles from Willimantic to Providence in approximately three hours. This is about a half hour longer than the train time, many stops being made by the latter. On the other hand the time in unloading the cans from the truck at Willimantic and putting them aboard the train would be saved. If there still remained a few minutes in favor of the railroad the guarantee of the dependable supply every

day would seem to more than offset the slight delay.

When the trains reach Providence the milk cars are shunted to a siding at the rear door of the company's big milk depot and their contents piped into the building. The milk is then weighed, tested, clarified, pasteurized, held a half hour in the holders, where the last germ gets what the Germans got; put through the cooling coils of the refrigerator and then to the machine, which bottles and caps quart containers at the rate of 60 a minute.

A peek in the clarifier at the end of its day's work would convince any sceptic that the sanitary laws provided for the care of milk are none too stringent.

horse and wagon the driver is not required to climb to the seat. He can do all his work from the rear of the vehicle, the horses being trained to travel from customer to customer driverless.

The answer of the truck booster is that a few trucks, the drivers being assisted by a bunch of fleet boys, could handle these 27 routes quicker and cheaper than they are cared for under the present system. Trucks are used in many other lines of business and by other milk distributors where stops and starts are frequent and the machines stood up and saved the concerns money.

The Providence Dairy Co. gets good service from its drivers due to a bonus system. A minimum is fixed for each



Truck Loaded with Two Tons of Bottled Milk for a Branch from the Main Station of the Providence Dairy Co. This Machine Is to Be Replaced by a $6\frac{1}{2}$ -Ton Machine.

There is a scum which is anything but appetizing in appearance and there are other ingredients. This, too, from milk which has come direct from the cow in quick time and under every possible safeguard.

Horses for Family Trade.

For its family trade the company employs 37 horses and 27 single wagons, 10 horses being in reserve. Delivery on the 27 routes of the company is practically a house-to-house affair, this concern being by far the largest in its field. In arguing for horse delivery to this class of trade, Manager Darling contends that the frequent stops and starts make the truck uneconomical. He claims the machine is damaged by the motor running while the truck is standing. He says that with a

route, which calls for the regular weekly salary. Allowances are made for deliveries and collections above this figure. Due to this bonus, salaries of drivers run from \$37 to \$47, most being near the latter amount.

The three trucks now in service at the Providence headquarters, in addition to transporting 15 tons of milk a day to the Pawtucket branch, make all the deliveries to what it called the wholesale store trade. This consists of cases of quart bottles which go to groceries, markets and bakeries. They also deliver to hospitals and provide the supply used on the New York boats. They are also employed for all emergency calls. When milk is wanted in a hurry the order is filled by power vehicle delivery.

DO NOT SPEED EMPTY TRUCKS.

Speeding empty trucks is bad practise, according to tire experts. The bouncing about on the road gives the double effect of skidding and overload. Drivers of pneumatic tired trucks are prone to speed up after delivering a load. This manner of driving is decidedly wearing on tires.

TO OPERATE 250 BUSSES.

The Philadelphia Motorbus Co. is seeking a franchise and if granted authority will operate 250 buses, each having a seating capacity of 79 persons.

CROSS CONTINENT IN HOUSE ON TRUCK CHASSIS.

In a house mounted on a Reo Speed-wagon chassis Mr. and Mrs. George C. Rising, daughter, Elaine, and Mr. and Mrs. L. D. Cutler, are on their way from Windsor Locks, Conn., to the Pacific coast and return, a trip which is expected to take about three months. The house is 14 feet in length, six feet and four inches wide and six feet high. The party sleeps on camp cots stretched across the car and gets its own meals. They claim that they much prefer their method than taking the trip in an ordinary touring car.

LOADS ON DRIVE-AWAYS.

Trucks driven away from the Schacht Motor Truck Co., Cincinnati, O., for dealers in the East have recently been doing a fine service for Cincinnati manufacturers by hauling products direct to the doors of eastern consignees.

TO STUDY TRUCK INSURANCE.

The Motor Truck Association of America has established an insurance department to make a study of insurance as applied to motor trucks. The information secured will be tabulated for the benefit of the association.

PRODUCTION AND DISTRIBUTION

PACKARD TRUCK PRICES.

New Packard truck prices, effective early in September, follow: Solid tires, size E. C., standard chassis, \$3850 f. o. b. Detroit. Size E. C., long wheelbase, \$3925. Size E. D., standard chassis, \$4900. Size E. D., long wheelbase, \$4975. Size E. F., standard chassis, \$5950. Size E. F., long wheelbase, \$6025.

Pneumatic tires, size E. X., standard chassis, \$4650. Size E. X., long wheelbase, \$4725. Size E. Y., standard chassis, \$6050. Size E. Y., long wheelbase, \$6125.

The old schedule called for completion of the year's allotment about Aug. 1, but many delays were encountered in production and it will be about Sept. 1 before the schedule is complete.

There will be no change in the models, the new schedule simply eliminating one or two sizes.

BIG MENOMINEE PRODUCTION.

The Menominee line of 1, 1½, 2 and five-ton trucks will be handled by FWD distributors, in conjunction with Menominee dealers now being engaged throughout the country. The stockholders of the Four Wheel Drive Auto Co., Clintonville, Wis., who recently acquired the Menominee business, will soon have production on an increased scale under way in the new Menominee plant, which is near the FWD factory and is practically completed. The reorganized Menominee Truck Co. of Wisconsin will soon remove its entire force of workers and its machinery into the new works.

SEWELL ASSEMBLY PLANTS.

The Sewell Cushion Wheel Co., Detroit, is building direct factory assembly plants in Chicago, New York and San Francisco, to meet the increased demand for its product.

The company has appointed the following new distributors: Gibbes Machinery Co., Columbia, S. C., for the entire State of South Carolina; 805 Tire Co., Ft. Wayne, Ind., distributor for northern Indiana; Casper Supply Co., Casper, Wyo.

SOCONY CAPITAL \$225,000,000.

A special stockholders meeting has been called for Sept. 1 by the directors of the Standard Oil Co. of New York to authorize increasing the \$75,000,000 capital stock by \$150,000,000 in new shares, to be distributed as a 200 per cent. stock dividend. It is planned to distribute the stock dividend to shareholders of record Sept. 10.

BUT THREE PARKER MODELS.

The Parker Motor Truck Co., Milwaukee, Wis., has stopped production on some of its series of trucks and is concentrating on turning out 2, 3½ and five-ton models, which not only meet the bulk of the demand, but also permit of standardization.

DETROIT STEEL PRODUCTS CO.

HAS WORLD'S LARGEST SPRING FACTORY

The Detroit Steel Products Co., Detroit, Mich., is ready to open newly constructed factory space, which will make this organization the largest motor vehicle leaf spring manufacturing concern in the world. The additions increase the company's capacity to 1,920,000 springs a year, enough to equip 540,000 vehicles.

The addition to the plant at 2250 East Grand boulevard include a new forge shop and steel storage bins, 242 by 65 feet. At present the company is turning out about 110,000 springs a month, weighing 2000 tons. Production will jump at once to 3000 tons monthly.

The new forge shop is being equipped throughout with the most modern spring-making machinery, an example of which is the new spring forming machine which forms, quenches and hardens the leaf in a single operation. This equipment makes an eight-leaf spring in a single revolution, requiring about one minute, thus greatly reducing the labor involved.

Steel will be unloaded directly from the cars by 10-ton electric cranes, which transport the steel to the storage bins and the forge shops. The storage bins have a capacity of 20,000 tons.

In addition to manufacturing motor springs the company also produces Fenestra Window Walls, having the largest steel window fabricating shop in the world.

Springs are furnished for about 50 passenger cars and truck manufacturers, including the following makes of trucks: Acason, Acme, All-American, Commerce, Columbia, Denby, Dodge, Gray, GMC, Hawkeye, Apex, Winther, Maxwell, Graham, Wichita, Triangle, Master, Jumbo, Bell, Hall, Tower, Traffic, Stewart, Transport, Defiance, King Trailer, Signal, Olson Unit, Carrier, Huron, Lone Star, Bollstrom, Higrade and Ace.

TIMKEN-DETROIT REPORT.

The Timken-Detroit Axle Co., Detroit, reports a surplus of \$11,459,444 and assets of \$25,533,438 for the six months ending June 30. Current assets are given at \$18,043,895, and current liabilities at \$3,825,993. There is \$5,000,000 preferred stock and \$2,984,900 common. The regular quarterly dividend of 1¾ on preferred, payable Sept. 1 to stockholders of record Aug. 20, has been declared.

129,188 FORD TRUCKS A YEAR.

During the fiscal year ending July 31 the Ford Motor Co., Detroit, produced 129,188 trucks. Its total of cars and trucks was 11,129 short of an even million. The schedule for the year beginning Aug. 1 calls for 1,250,000 cars and trucks.

YOUNG TRUCKS READY SOON.

Young motor trucks will be in production at Cleveland, O., within 50 days, according to President H. B. Young. The latter has been truck division manager of the Chicago Pneumatic Tool Co., manufacturer of Little Giant and Giant motor trucks, for the past 10 years. Other officers of the organization are: Vice President, B. L. Van Woert, former assistant manager of the Chicago Pneumatic Tool Co.; secretary, O. L. Travis, former sales manager for Swinehart tires; treasurer, H. W. Graham of the Garfield bank; directors, W. C. Duntley, president of the Duntley Pneumatic Tool Co., and former president of the Chicago Pneumatic Tool Co.; A. C. Thomas and R. J. Burns.

ONEIDA PLANT ADDITION.

The Oneida Motor Truck Co., Green Bay, Wis., is to occupy the second unit of its plant about Sept. 1, the new building being a duplicate of the first factory built about three years ago. Production will be increased from 50 to 75 per cent. The new structure cost \$275,000 and in addition to an increased output of trucks will allow the manufacture of radiators, all sheet metal work and other parts for Oneida machines.

VULCAN TRUCKS TO CANADA.

The Vulcan Motor & Engineering Co., Ltd., Southport, England, a branch of the Harper Bean combine, is planning to later build a branch factory in Canada for the manufacture of Vulcan trucks. Walter E. Walker, director and general manager, is now in Montreal bringing this truck to the attention of manufacturers, dealers and bankers.

BIGGER CONCORD OUTPUT.

The Abbot-Downing Co., Concord, N. H., manufacturer of Concord trucks, is reported to have acquired the necessary capital to finance operations which will allow a production to meet the demand. General Manager Marcel Theriault states that the call for Concord trucks is far in advance of the company's present capacity.

NOW WALKER BODY CO.

The H. H. Franklin Manufacturing Co., Syracuse, N. Y., has purchased the interests of the late Harlan P. Wells of the Walker-Wells Co., Amesbury, Mass., body manufacturer. The concern will hereafter be known as the Walker Body Co.

TO MAKE TRUCK BODIES.

The Upton Machine Works, Benton Harbor, Mich., has been organized with Emery Upton as president, to manufacture special bodies for automobiles and trucks.

ACTIVITIES OF TRUCK INDUSTRY

TEST PIERCE-ARROW MODELS.

The new Pierce-Arrow truck line of 2, 3½ and five-ton models was given a hill climbing test at Colden hill, Buffalo, N. Y., July 31, with capacity loads, and answered every demand. They worked alongside the old line trucks and displayed marked superiority. The tests were supervised by C. L. Sheppy, consulting engineer, and John Talcott, experimental engineer, in the presence of 500 shop foremen to whom the reorganization policy of the company was outlined by Robert Patton, truck sales manager, and Col. C. M. Tichenor, assistant general superintendent.

TO FINANCE TRUCK SALES.

J. P. Cranston, general manager of the Vim Motor Truck Co.'s Philadelphia branch, has resigned to head the Acceptance & Finance Corporation, which will specialize in buying secured paper covering time purchases of motor trucks and will conduct a general brokerage business. Philadelphia business men of standing are backing the enterprise, which is capitalized at \$2,000,000. Mr. Cranston is president of the Motor Truck Association of Philadelphia and a director and treasurer of the Bateman Manufacturing Co.

TO PRODUCE GRAY ENGINES.

The Gray Motors Corporation, which recently bought the Gray Motor Co., Detroit, will continue the production of the Gray truck and tractor engine and will also manufacture a four-cylinder car. Frank F. Beall, formerly vice president of manufacturing of the Packard Motor Car Co., heads the corporation.

FWD FOREIGN SHIPMENTS.

During the latter part of July the Four Wheel Drive Auto Co., Clintonville, Wis., made large export shipments of FWD trucks, Queensland, Australia and Auckland, New Zealand, being ports and Roumania, Peru, Argentina and China countries to which this equipment was forwarded.

WISCONSIN PARTS, OSHKOSH.

On page 273 of the June issue of MOTOR TRUCK an error located the Wisconsin Parts Co. at Racine, Wis., instead of Oshkosh. The mistake is regretted as inconvenience was caused the company through a number of inquiries concerning its product being addressed to Racine.

THE WELLS MOTOR TRUCK CO.

The Wells Motor Truck Co. has been incorporated with \$200,000 capital at Brownsville, Pa., with R. J. Wells, G. S. Salvason and George J. Young as incorporators.

NEW DUNLOP TIRE PLANT'S INITIAL OUTPUT WILL BE 12,500 TIRES DAILY

Perry D. Saylor, vice president and general manager of the Dunlop Tire & Rubber Co. of America, announces that the company's entire production of 12,500 tires daily will include only solid truck tires and pneumatic cord tires and tubes for trucks, passenger cars and motorcycles. Present plans do not call for the manufacture of fabric tires. To protect itself against fluctuations in raw and partly finished material supply and in order to control the quality the company has purchased a textile mill at Utica, N. Y. Purchased power has been adopted as a safeguard against possible coal shortages or transportation difficulties.

The present floor space of the magnificent Buffalo factory is 1,250,000 square feet and the production schedule can be doubled without an increase of floor space. The concern will start operations within a few months and will employ 7000 at the start, later increasing this number to 10,000. Production will be in full swing early in 1921.

Among the executive personnel of the organization will be found the following: Factory manager, George R. Johnson; engineering manager, John Flower; production manager, C. R. Redfield; sales manager, C. L. Landon; director of industrial relations, C. P. Berner. Messrs. Flower and Landon are former Goodyear executives.

EXPORT 24,356 TRUCKS A YEAR.

For the year ending June 30 a total of 24,356 trucks, valued at \$41,577,684, were exported as against 12,921, valued at \$33,233,485, for the 12 months ending June 30, 1919. In the month of June, 1920, 2697 trucks, valued at \$4,216,502, were exported against 1767, valued at \$3,935,211 during the same month a year ago.

KALAMAZOO PLANT ADDITION.

The Kalamazoo Motors Corporation, Kalamazoo, Mich., has 7117 more square feet of manufacturing space available as a result of the recent completion of a factory addition.

TRUCK MANUFACTURERS MEET.

The Motor Truck Manufacturers' association informally discussed the problems facing the industry at a convention held at the Congress hotel, Chicago, Aug. 11.

HAWKEYE PRICES.

Present prices for Hawkeye trucks are: 1½-ton model, \$2365; two-ton, \$2915; two-ton long wheelbase, \$2970; 3½-ton, solid tires, \$4345; 3½-ton, pneumatics, \$4950.

JACQUET TRUCKS IN PRODUCTION AT MANITOWOC, WIS.

President and General Manager Alfred J. Jackson of the Jacquet Motor Corporation announces that this organization is now in production at its new plant at Manitowoc, Wis., having removed from Belding, Mich. The company is manufacturing a two-ton worm drive truck, using Wisconsin engines and worm drive axles, made by the Wisconsin Parts Co.

The truck is being turned out at the same plant with the Jacquet flyer, a passenger car. President Jackson of the company was connected with the Pierce-Arrow Motor Car Co. in pioneer days, later with the Republic Motor Truck Co., and had considerable experience with the Napier Motor Car Co. of London, England.

SCHNETZKY WISCONSIN MOTOR MANUFACTURING CO. PRESIDENT.

The Wisconsin Motor Manufacturing Co., one of the leading passenger car and motor truck engine builders, has elected Hugo W. Schnetzky, a prominent Milwaukee architect and business man, president and treasurer, succeeding Charles H. John, who has resigned to enjoy a long rest after 12 years' service with the organization.

LONG RADIATORS TO BE MADE AT FREMONT, O.

The Long Manufacturing Co., Detroit, has made arrangements to manufacture its cast tank truck radiators at Fremont, O., in a large building adjacent to the Fremont Foundry Co., from which it secures its gray iron castings. This does away with a big transportation problem.

MARWIN OFFER WITHDRAWN.

The Marwin Motor Truck Co., Kenosha, Wis., has withdrawn the offer made James H. Elliott, temporary receiver for the Moore Motor Vehicle Co., to purchase the Danville, Ill., plant, assume the liabilities and give the stockholders \$150,000 of its own preferred stock.

RUSHING BETHLEHEM PLANT.

The Bethlehem Motors Corporation, Allentown, Pa., is rushing the work toward completion on its new factory buildings, which permit an annual production of 20,000 trucks and will be a model in American automotive manufacturing circles.

GOODRICH PRICES STICK.

The B. F. Goodrich Co., Akron, has advised the tire trade that present prices of all sizes and classes of Goodrich tires are guaranteed until Nov. 1. This date marks the end of the dealers' contract selling season. It has no other significance.

NEW KELLY-SPRINGFIELD FARM TRUCK

UNDER the trade name of Rural Utility power wagon the Kelly-Springfield Motor Truck Co., Springfield, O., is building a 1½-ton truck chassis which is maintained by the company to meet the needs of road and load conditions for rural transportation, on which is installed a new designed body that is convertible to any one of eight different types without special tools, and any one of these changes can be, it is claimed, made in a minute.

The factory designation of the chassis is K-31, and this has a 144-inch wheelbase and the forward tread is 57 inches and the rear tread 61 inches. It is shod with pneumatic tires, the forward set 36 by six inches and the rear set 38 by seven inches. The maximum speed is 20 miles an hour.

The chassis differs with most others of this load capacity in that it is driven by a jackshaft and double side chains, and the relation of the rear axle is maintained by radius rods, this being a reversion to a construction that has been adhered to in the larger trucks produced by this company.

Engine is a Standard Type.

The engine is a four-cylinder, four-cycle, water cooled type, the cylinders being cast en bloc with the water jacket integral, with cylinder bore of 3¾ inches and stroke of 5¼ inches, that is rated at 22.50 horsepower by the S. A. E. formula. The crankshaft is a three-journal design. It is cooled by a circulation of water forced through the cylinder jacket by a centrifugal pump that is positively driven, and through a radiator with cast top and bottom tanks and a finned tube cooling section that is flexibly mounted to protect it from road shocks and chassis distortion. Radiation is promoted by a fan driven by a flat belt from a pulley on the flywheel. Following the Kelly-Springfield design the radiator is incorporated with the dash and the engine is covered with a Renault type hood.

The engine is lubricated by a self-contained automatic pressure system, the oil being drawn from the reservoir by a gear pump and distributed by tube manifold to the engine bearings and the timing gearset. The cylinders, pistons, wrist-pins, cams and valve tappets are lubri-

cated by splash. The source of the ignition current is an Eisemann high-tension magneto with a fixed spark, and the carburetor is a Zenith with a stove connection with the exhaust manifold to insure starting at low temperatures. The engine is supported at three points in the chassis frame.

The power is transmitted by a cone clutch, a clutch shaft, a driving shaft with universal joints at either end to the transmission gearset and jackshaft, which are a unit construction, and which are suspended at three points. The transmission gearset is a selective sliding gear type having three forward speed ratios and reverse, and the differential gearset is a bevel gear construction. The drive is by sprockets on the shafts of the jackshaft and the rear wheels by roller chains. The relation of the rear axle is maintained by radius rods that are adjustable, and have spherical couplings.

The front and rear axles are I section steel drop forgings, the front axle having heavy steering knuckles. The wheel spindles are fitted with roller bearings. The frame is a pressed steel channel section, the cross members being extended with flanges that are riveted, this dispensing with gusset plates. The frame is mounted on long, semi-elliptic springs. The wheels are wood, artillery type, shod with pneumatic tires, 36 by six inches forward and 38 by seven inches rear.

The steering gear is at the left side and is a worm and gear type that is fitted with a spring cushioned drag link. The hand wheel is 20 inches diameter. The control is conventional and the brakes are both internal expanding within drums 15¼ inches diameter on the rear wheels.

The equipment includes driver's seat, cab and storm curtains, front fenders and running boards, gas head lamps, Prest-O-Lite tank, oil dash and tail lamps, power tire pump, warning signal, hub odometer, tools and jack.

Quick Convertible "8 in 1" Body.

The special convertible body may be successively a grain tight type with capacity for 80 bushels, a flat rack with scoop board up, flat rack with scoop board down, all from the grain body; a

flareboard type, starting as a flat rack with the scoop board down; a hog rack, starting as a flat rack with the scoop board down; a straight side stock rack, a flared rack and a basket rack.

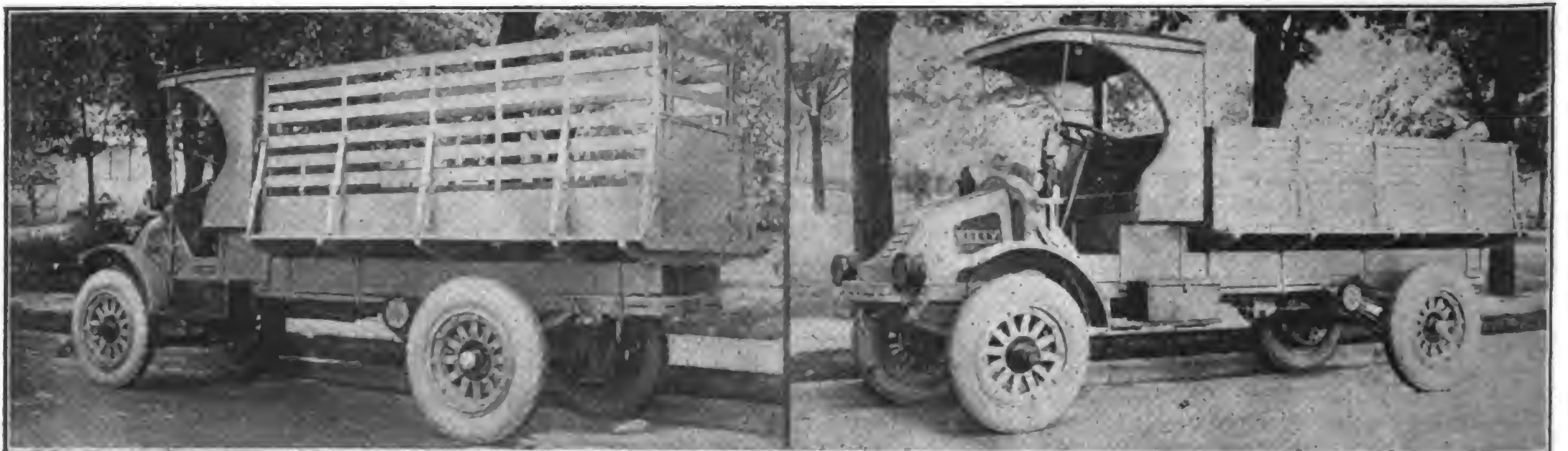
As will be noted from the illustration the body is wood and the front end, the lower side sections and the lower section of the tail gate are solid wood and permanent. The body is built on bolsters carried on sills the full length of the chassis frame. The bolsters extend beyond the sides of the body and on these are secured wide, flat, longitudinal rails, in which are mounted the ends of the telescopic braces (five at either side), that support the sides.

The sides above the box boards or lower sections consist of two-section racks, the middle parts of the racks being hinged on the box boards to swing outward, and the upper parts hinged to swing inward. The vertical members of the racks are outside, and when the racks are folded the horizontal members fit between each other to form practically solid sides above the lower sections.

The rack side may be positioned at any angle between vertical and horizontal when folded, or when extended the lower part of the rack may be horizontal and the upper section placed at right angle to this. The last position forms what is known as a basket rack. The tail gate is extended by a rack section when used as a stock rack, the ends of the stanchions fitting into sockets. The body is so constructed that it may be braced solidly in any of the positions and retained by steel rods that are secured by pins. Claim is made that any change can be made easily and quickly without tools. When folded the rack sides are secured by heavy steel buttons.

The body is designed especially for farm purposes and it is equally adaptable for heavy freight or to light or bulky loads to capacity. Being quickly convertible it may be used for a wide diversity of works and it is extremely economical of time and labor.

Multonomah Truck Co., Vancouver, Wash., has started work on a factory in which two sizes of trucks will be manufactured.



The New Kelly-Springfield 1½-Ton Truck Equipped with Rural Utility Convertible Body: At Left, with Sides at Full Height for Stock Haulage; at Right, Sides Folded to Form a Grain-Tight Body of 80 Bushels Capacity.

REPORTED EARNINGS AND DIVIDENDS

SINCLAIR NETS \$15,542,676.

The Sinclair Consolidated Oil Corporation reports a net income of \$15,542,676 in the six months ended June 30, after providing for fixed charges and Federal taxes. This profit was derived from gross sales amounting to \$66,913,596, which were only about \$11,000,000 less than in the full year 1919. The net revenue was equal to \$4.13 per share of stock.

The management noted in the semi-annual statement, issued Aug. 5, that expenses, maintenance, insurance and ordinary taxes required \$50,277,678, compared with \$54,300,060 in the 12 months of 1919, while interest, discounts and Federal taxes absorbed \$1,877,490. The comparative size of the company's business in the first half of 1920 is emphasized in the fact that the net income in 1918 was \$20,524,588 and in 1917 \$16,222,654 covering the full years.

WAUKESHA EXPANSION.

The Waukesha Motor Co., Waukesha, Wis., a leading manufacturer of heavy duty motors for trucks, tractors, etc., has doubled its authorized capitalization, which is now \$2,000,000. The original stockholders will take most of the new stock issue, the money from which will be used to bring about the expansion made necessary by growing business. Harry L. Morning is president and chief engineer of this successful organization.

B. F. GOODRICH REPORT.

The B. F. Goodrich Rubber Co.'s balance sheet as of July 28 shows an increase of current assets to \$104,470,421, as compared with \$87,139,439 at the close of last year. Current liabilities were \$31,902,556, leaving working capital of \$72,567,865, as compared with \$55,951,631 at the close of 1919.

MACK TRUCK EARNINGS.

The International Motor Corporation, manufacturer of Mack trucks, in its report for the six months ending June 30, shows net profits after charges and Federal taxes of \$2,163,421, equal after preferred dividends to \$5.64 a share on 283,108 shares of common.

NELSON CAPITAL \$1,100,000.

The Nelson Motor Truck Co., Saginaw, Mich., has increased its capital from \$500,000 to \$1,100,000 in order to care for expanding business. The increase is equally divided between common and preferred at \$10 par.

CONSOLIDATED DIVIDEND.

Continental Motors Corporation, Detroit, has declared a quarterly dividend of 1½ per cent. payable Oct. 15 on preferred stock of record Oct. 6.

NEW FINANCING FOR STANDARD PARTS CO.

By the terms of a new financing plan, which will be handled by a banking syndicate headed by Otis & Co., the Standard Parts Co., Cleveland, will issue and sell \$8,000,000 five-year eight per cent. first mortgage collateral trust gold notes and 80,000 shares of common stock. The proceeds will be used to retire \$6,000,000 seven per cent. notes maturing Sept. 5.

The number of common and preferred shares of the company remain unchanged, while the outstanding common stock will be exchanged, share for share, for new common, and new preferred also will be issued which will differ from the old only in the modification to defer redemption requirements during the life of the new notes.

The banking syndicate includes, in addition to Otis & Co., Borton & Borton, the First National bank, the Guardian Savings and Trust Co., the Citizens Savings and Trust Co., the Union Commerce National bank and the Cleveland Trust Co., all of Cleveland, and the Chase National bank of New York.

FISK SALES \$27,000,000 FOR SIX MONTHS.

The Fisk Rubber Co. reports sales in excess of \$27,000,000 for the first six months of the year. This is 32 per cent. greater than for the first half of last year. In the first six months the company earned more than its common and preferred dividends for the entire year after all charges. Officials look for a year's business beyond the \$50,000,000 mark.

AUTOMOTIVE INDUSTRY LULL BUT TEMPORARY.

The B. F. Goodrich Co., Akron, O., has issued a statement to the effect that the recent curtailment of production in the automotive industry, caused by unusual economic conditions, is only temporary and need cause no alarm.

RAINIER DIVIDEND.

The Rainier Motor Corporation, New York city, declared a regular quarterly dividend on July 20 of two per cent. on the preferred stock, payable Sept. 1 to stockholders of record July 15.

NO COLUMBIA REORGANIZATION.

The plan to reorganize the Columbia Truck & Trailer Co., Pontiac, Mich., and remove the business to Findlay, O., has been abandoned.

\$1,000,000 CORPORATION.

The Affordable Motor Truck Co. has been incorporated at Wilmington, Del., with a capital of \$1,000,000.

EISEMANN EARNINGS.

The increased earnings of the Elsemann Magneto Corporation, as indicated in its report of July 1, reflects the prosperity of the automobile industry, the increased production of ignition apparatus suggesting the heavy volume of business carried on by the trade. Orders and contracts on hand Jan. 1, 1920, totaled \$2,978,362, or \$1,500,000 increase over the corresponding date of 1919. Orders and contracts on hand July 1 were \$3,442,380, or an increase of 100 per cent. over July 1, 1919.

Net sale of Elsemann Magneto Corp. for the first six months of 1920 were \$2,316,482. For the last six months of 1919 sales were \$1,665,681, the first six months of 1920 showing an increase over the preceding half year of \$650,000.

WHITE QUARTERLY DIVIDEND.

The White Motor Co. has declared the regular quarterly dividend of \$1 a share, payable Sept. 30, to stockholders of record Sept. 15. The company's net operating income for the quarter ending June 30 was \$330,152, equivalent to 37 cents a share earned on the \$4,349,900 capital stock (par value \$5). This compares with \$809,727 in the preceding quarter, or 93 cents a share, and \$370,215, or 42 cents, in the corresponding period in 1919.

PIERCE-ARROW EARNINGS.

The Pierce-Arrow Motor Car Co., Buffalo, N. Y., shows a surplus after charges and taxes of \$705,799 for the quarter ending June 30. After preferred dividends this was equivalent to \$2.02 a share earned on the outstanding common stock of no par value. In the corresponding period last year \$1.70 was earned on the outstanding common.

LA FRANCE EARNINGS.

The earnings statement of the American La France Fire Engine Co. for the second 1920 quarter, which has just been put out, shows an operating profit of \$275,231, which, after the deduction of interest, left net income before excess profits taxes of \$241,168.

SINCLAIR DIVIDEND.

The Sinclair Consolidated Oil Corporation has declared an initial quarterly dividend of \$2 a share on the preferred stock, payable Aug. 15. This stock was recently issued in exchange for its 7½% convertible gold notes.

MORE REYNOLDS CAPITAL.

The Reynolds Motor Truck Co., Mount Clemens, Mich., has increased its capital \$400,000. It is all common stock and is being offered first to present stockholders.

"SMALL TOWN" TRUCKING SUCCESS

Fighting cut-throat methods of competition as practised by fly-by-night truck men of the one-vehicle type, the East Providence Trucking Co., East Providence, R. I., is merrily pursuing its forward drive, the addition of three new trucks to its fleet this month showing how it has fared in a war of the survival of the fittest.

This company, of which Arthur Odette

take any job that offers a few dollars in immediate revenue even should the returns not be enough to pay for the driver's time and the gasoline and oil used, not counting in wear and tear of vehicle or other overhead expense.

East Providence is probably not the only place where such underhanded work is done to the detriment of the industry. The men who "carry on" along these

his money and invested it as first payment on a big truck, which cost, completely equipped, around \$6000. The truck was not given good care and the work it performed was on the grab-any-thing-at-any-price order. A few days ago the poorly maintained truck broke down completely. It could not be driven and apparently is reduced in value to its worth as junk. It has been only partially paid for.

Because of his lack of knowledge of truck costs and of the trucking business in general this erstwhile capitalist has not only lost his savings, but is head over heels in debt. Had his truck been properly looked after and his business carried on along right business lines he would have a good truck today with every prospect of clearing off the debt at an early date and with a future akin to that of the East Providence Trucking Co., which was born less than 12 months ago and by dint of doing business in a business way and giving other truck men half the road in the hauling market has now a fleet of eight trucks, none of which ever have an idle day.

Fleet of Eight Trucks.

The trucks owned by the company are four 3½-ton Sanfords, three 3½-ton Acasons and one Reo Speed Wagon. The big trucks have tackled every kind of a job, defying tonnage and distance. They are always ready for work, operate at a minimum cost and are satisfactory in every way.

Manager Odette is at present negotiating for a big contract, which will keep at least one of his trucks busy for many a day. This comprises the hauling of about 1,000,000 pounds of raw wool annually to Taunton, Mass., for finishing purposes. He figures that his truck will make two round trips a day, which will be a total of 72 miles, Taunton being 18 miles from East Providence.



One of the Sanford Trucks of the Fleet of the East Providence, R. I., Trucking Co., a Concern That Has Made Rapid Growth in a Year.

is proprietor and manager, has been in existence but a year and is now running eight trucks and keeping them busy. It has encountered the stiffest kind of opposition and has had verbal contracts repeatedly broken through the efforts of rivals who have offered to do the work for less.

Usually this brand of brotherly love has been displayed by owners of one truck—generally a decrepit, antiquated chariot—who keep no cost figures of any kind and who, with no work in sight,

lines naturally go out of business in a short while. Even where they do not take a quick job below cost in order to keep working, or beat out a rival, they are losing money constantly as most of them have no idea what it costs them to operate their trucks and attempt to compete with railroad freight rates. This cannot be done.

Ignorant Truck Owner Fails.

One of the truck owners of this class in East Providence went out of business suddenly the other day. He had saved

NORTHWAY HELP ON OUTING.

The 600 employees of the Northway Motor Co.'s plant at Natick, Mass., the 300 salesmen who handle the Northway truck and their wives and families, together with the company officials, enjoyed an outing at Lake Pearl on Saturday, Aug. 7. The salesmen held a banquet at the Copley-Plaza, Boston, the previous night. Speeches were made by President James F. Cavanaugh, Ralph E. Northway, James F. Finneran, Carl G. Davis, Charles A. Cook, Philip A. Hendrick, Frank V. Noyes, John C. Reilly, George C. Fairbanks, Frank Schindewolf and J. J. Prindiville.

BUSES SAVE DAY AT BRIDGEPORT.

Three hundred and fifty buses are carrying 150,000 passengers daily at Bridgeport, Conn., where the trolley lines were recently withdrawn from service. The buses are credited with giving quicker transportation at a smaller fare. Most of the buses in use seat from 25 to 35.

TRUCK INDUSTRY MUST FIGHT ADVERSE LEGISLATION IN MANY STATES

The signs of the times indicate that 1921 will be the banner year for unfair legislation against the trucking industry. Over two-score legislatures to convene during the year will consider something like 3000 bills affecting the use of motor vehicles. Most of these will make the truck their target.

Every truck manufacturer, dealer and owner must be primed to get into the fray and back the efforts of the motor vehicle conference committee, comprising representatives of the six leading national automotive bodies, which is constantly on the alert against adverse auto legislation.

It must not be presumed that all legislative bills are bad and it also must be agreed that the truck and automobile industries must be ready to pay their

fair share of the cost of running both state and national governments. Before any bill should be fought it would be proper to have its provisions carefully reviewed by experts so that it will be shown to be clearly inimical to the auto or truck interests before any battle is waged against it. Once a measure is declared to be a blow at those who make their livelihood in the automotive field a vigorous, determined fight should be carried on for its extinction.

TO TOUR BLUE GRASS REGION.

Spurred on by the success of its recent ship-by-truck tour when 28 towns were visited and 17,500 persons reached on a trip of 308 miles, the Cincinnati Motor Truck Dealers' association is to start another tour Aug. 30, this time through the Blue Grass region of Kentucky. Farm demonstrations will be made en route and the motorcade will be out about a week. More than the 15 trucks which were on the last tour are expected in line.

NEW DISTRIBUTORS AND AGENCIES

MARKETING THE HARE'S MOTORS PRODUCTS IN PENNSYLVANIA.

The announcement that the Philadelphia branch of the Locomobile Co. will also control the distribution of the Mercer after Aug. 17 is another step toward centralizing the distribution of Hare's Motors products, the Locomobile, Mercer, Simplex and the Riker truck. Oscar Coolican, formerly manager of the Detroit branch of the Packard Motor Car Co., is in charge of the Philadelphia branch, of which B. C. Helm, another former Packard executive, is special representative.

125,000 NASH DISTRIBUTORS.

The Nash-McLarty Motor Co. has been formed from a consolidation of the Brown Automobile Co. and the McLarty Motor Co. at Dallas, Tex., to distribute Nash cars and trucks in that territory. The new company has a working capital of \$125,000. The officers are: President, F. E. McLarty; vice president, W. E. Brown; secretary and treasurer, D. F. Anderson.

SERVICE BY AIRPLANE.

The Greenlaw Truck & Tractor Co., New Orleans distributor of Duplex trucks, recently got a hurry call for service from J. E. Thorsell, Alexandria, La., and sent I. E. Patterson the 250 miles in an airplane, he being at work on the truck two hours and 45 minutes after the take-off.

NEW SANFORD DISTRIBUTOR.

During a recent visit to New Orleans, C. F. Doty, general sales manager of the Sanford Motor Truck Co., Syracuse, N. Y., appointed the Seaman-Knight Motors Co. as Sanford distributor in all of Louisiana and the lower part of Mississippi.

WHITE MILWAUKEE HOME.

The White Auto Co., Milwaukee distributor of White trucks, has moved into its handsome new home, Milwaukee and Martin streets, one of the largest and most imposing structures on Automobile Row.

PAIGE TRUCKS IN KANSAS.

J. A. Keiffer is putting up a new building at 612 Mechanic street, Emporia, Kan., where he will distribute Paige cars and trucks.

TRUCKS SUCCESSFULLY CONTEND WITH EXTREME WEATHER.

For many months 15 Kissel trucks have been worked continually without interruption in the Imperial Valley, Cal., hauling canteloupes, watermelons, etc., from the fields to the packing pits and to the refrigerator cars under adverse condi-

BIG DENBY AND DUPLEX HOME IN PHILADELPHIA.

The Huffman-Southworth Co., 1230 North 26th street, Philadelphia, which is marketing Duplex and Denby trucks in that city and a considerable outside area, has moved into a handsome new building which has 12,000 square feet of floor space and is thoroughly equipped for the highest class of service for both these trucks. All models are on display and a full line of parts is carried. Both the Denby and Duplex trucks are well known and popular in this territory.

The firm members are both prominent in the automotive field. Lester C. Huffman was formerly a factory district representative for the Denby Motor Truck Co. George C. Southworth was formerly factory district representative for the Duplex Truck Co. They have both had experience in retail salesmanship and know the owner's problems as well as those of the distributor.

DENBY QUARTERS IN TEXAS.

The Denby Truck Co. of Texas has moved into its new quarters at Commerce and Market streets, Dallas, in the building formerly occupied by the American Well Works. The officers are: President, Tom L. Camp; vice president and general manager, O. E. Wofford; secretary and sales manager, K. M. Watkins; treasurer, Edwin Hobby.

2000 PARKERS TO EAST.

The Parker Motor Truck Co., Milwaukee, has closed a contract with the Wilson & Vevera Corporation, 1482 Broadway, New York city, to distribute 2000 of its trucks in eight eastern states. Dealers will immediately be selected in the principal cities and deliveries will start Aug. 1.

NEW EQUITABLE QUARTERS.

The Equitable Motor Truck Co., New York city, has leased for its headquarters a one-story building on the northwest corner of 136th street and Madison avenue, covering 200 feet on the avenue and 200 feet on 126th and 137th streets.

HANDLES MASTER TRUCKS.

The R. G. Anderson Motor Co. has been organized at Abilene, Tex., to distribute Master trucks, automobiles and accessories.

tions, not only of temperature, but in traction, due to the soft fields and sandy silt, often hub deep.

An instance that shows the climatic extremes is that of a 2½-ton Kissel truck loaded with watermelons weighing 8500 pounds starting from the valley 119 feet below sea level, making 70 miles of mountain grades after dark, reaching an

COUNTY OFFICIAL TO DISTRIBUTE TIFFIN TRUCKS.

Charles E. Crum, assistant cashier in the county treasurer's office, has purchased a half interest in the Tiffin Motor Truck Sales Co., 209 East Berry street, Fort Wayne, Ind., which has the Indiana territory for all the products of the Tiffin Wagon Co., Tiffin, O. Its chief effort will be the distribution of trucks. Associated with Mr. Crum is Lou H. France, formerly an assistant sales manager of the Tiffin concern.

DISTRIBUTING HUFFMANS.

The Fidelity Motors, Inc., has been formed at Philadelphia with a capital of \$250,000 and has taken over the United Sales Co., distributor of Huffman cars and trucks and Commonwealth cars, with the latter's salesrooms and service station at 4830-34 Market street. The officers are: President and treasurer, Everett Cummins; vice president and general sales manager, George C. Henderson; secretary, Floyd A. Shoemaker.

GMC LINE AT LAREDO, TEX.

The Moser Auto Co., comprising Joe and Aaron Moser, has taken over the former quarters of the Laredo Auto Sales Co., opposite the Hamilton hotel, Laredo, Tex., and will handle the General Motor Co. line of products, including Reo and Chevrolet cars and trucks.

ONEIDA QUARTERS IN CHICAGO.

The Chicago-Oneida Truck Co. has taken possession of its new building at Wabash avenue and 23rd street, Chicago. Open house was held the week of July 25. The new structure is one of the most modern devoted exclusively to truck sales and service in the central west.

VREELAND A DUPLEX MAN.

The Duplex Truck Distributing Co., Denver, Col., which handles Duplex trucks in Colorado and Wyoming, has secured the services of W. M. Vreeland, formerly sales manager for the Tower Motor Car Co., Greenville, Mich.

WHITE TEXAS DISTRIBUTOR.

The White truck will be distributed at Midland, Tex., by Greenhill & Sharp, a hustling concern which recently enlarged its business. C. C. Bailey has become associated with the concern.

altitude of 1420 feet and then down to sea level again at San Diego.

During the summer months the temperature very seldom is under 100 degrees at night in the valley and during the day time reaches from 130 to 135 degrees in the sun. Any truck radiator that will not boil under these conditions, even running light, must be adequate.

PROGRESSIONS OF THE INDUSTRY

CHICAGO RAPIDLY BECOMING BIG CENTER FOR TRUCK MANUFACTURE

Chicago is rapidly becoming a center for motor truck manufacturing, as well as for the making of truck bodies, parts and accessories. The big western city has about 20 truck factories at present, including the Diamond T Motor Co., International Harvester Co., Master Truck Co., Inc., All-American Truck Co., Dearborn Motor Truck Co., Nelson & LeMoon Co., Old Reliable Motor Truck Co., Walden Shaw Co., Fargo Motor Car Co., Available Truck Co., the Couple-Gear Power Truck Co., Hendrickson Motor Truck Co., United Four Wheel Drive Co., the Marshall Mfg. Co., Victor Motor Truck Co. and Sandow Motor Truck Co. These concerns manufacture gasoline-propelled trucks, while the Walker, an electric-driven commercial vehicle, is made by the Walker Vehicle Co.

Convertible bodies for trucks and automatic dumping bodies form a part of Chicago's truck fitments makers, and the largest concern manufacturing along this line is the Lee Loader and Body Co., which concern makes practically every conceivable type of body for trucks intended especially for hauling gravel, sand and similar commodities. Trailers, which have been found of great value in certain forms of haulage, are made by Jacob Press & Sons. In addition to these devices there are a host of manufacturers making truck attachments for Fords.

Chicago has a very good representation when it comes to the manufacturers of bodies for both passenger cars and commercial vehicles, there being no less than a dozen concerns specializing along these lines. Commercial car bodies of every description are made by the Auto Truck Steel Body Co., William Erby & Sons Co. and Fred L. Meckel.

WHOLESALE TOBACCO SELLING FROM TRUCK STORE.

A Federal truck, equipped with a complete traveling store, with all its departments inside, is delivering the goods and winning business for C. L. Hulett, wholesale tobacconist, Troy, N. Y. The truck serves as a splendid advertisement for the business, being attractively finished and bearing the name of the owner on the side and back in gold letters. The body is painted in bright pall-mall color, with gold lettering and trimmings, while all metal parts, such as radiator, tank and guard, lamps, hub caps and steering column, are nickel plated. Pneumatics are used all around.

The company does a great deal of business, not only with the many retail stores in Troy handling cigars, cigarettes and tobacco, but with stores in all the neighboring towns. This business necessitates daily deliveries. To carry a sufficiently varied stock for the retailer to make his selection right from the truck, thus doing away with a great deal of the bother of double record keeping on so many small orders, this system was installed. It also keeps the expense of the shipping department lower, avoiding the unnecessary handling of many small packages.

In spite of the unusually severe weather during the past winter the truck has been on the job every day with its deliveries and is not only speeding up the deliveries, but is increasing business by the attention it attracts.

ALL CITIZENS BUILD ROADS.

Every able-bodied male in Oktibeha county, Miss., put in Aug. 17 at work on the roads, it being declared a public holiday and all business and farming being suspended. Labor could not be secured to make repairs on the highways and the public spirited people of the district overcame this obstacle in their own novel and highly creditable way.

WEIDELY PREDICTS FASTER TRUCKS BURNING LOWER GRADES OF FUELS

George A. Weidely, vice president and chief engineer of the Weidely Motors Co., Indianapolis, Ind., sees a call for faster trucks from the farmer, the manufacturer and the man who makes the use of the truck his business. In this connection he says:

"Not alone must the road conditions be suitable for the work, but the trucks themselves must be designed for this particular service. With the continual rising cost of motor fuels, one of the first things to take up for consideration is a motor design that will give the greatest power output per unit weight of fuel. The general design of a motor should be such as will permit of reasonably high speed. In the writer's opinion the two above mentioned items call in the first place for valve in the head motors, fairly high gas speeds in the passages, a bore and stroke ratio of at least 1 5/10 to 1, and the proportioning of parts that will permit of operating these motors at reasonably high speed continuously.

"The average passenger car motor of today, while it may have the ability to operate at high speed on a passenger car, as well as being fairly economical in the use of fuel, is not sufficiently rugged to stand up under the service required of the speed wagon. Also, the engine may at times be expected to operate for some time in low gear. On the other hand, the heavy duty truck or tractor motor of the present day design is unnecessarily heavy and its economical operating speeds are too low. The writer is of the opinion that the speed wagon requirements call for motors that will burn low grade gasoline or kerosene, that will operate at normal load at approximately .6 pounds of fuel per horsepower hour and that will have the high speed possibilities of the up-to-the-minute passenger car motor and the durability and ruggedness of the truck or tractor motor. In other words, it is a hybrid derived from the two."

FIGHT CITY TAX ON TRUCKS.

The principle that outside trucks wear roads as much as those locally owned is being advanced in Aurora, Ill., against a proposed ordinance which provides for taxes of from \$10 to \$75, according to size, on motor trucks, the money to be used to keep the roads in repair.

U. S. SEEKS HAULAGE EXPERTS.

A number of superintendents of motor transportation are sought by the government at salaries ranging from \$2100 to \$2400. Applicants may make arrangements to take the examinations through the secretaries of local civil service boards.



Federal Truck Chassis with Special Body Used by Wholesale Tobacco Dealer's Salesman for Immediate Delivery of Orders from Stock.

SPRING MOUNTING AND LUBRICATION FOR SERVICE TRUCKS

CHASSIS improvement through perfecting the details of construction is sought by progressive engineers who have to deal with the assembly of specialized units. The attention of the engineering staff of the Service Motor Truck Co., Wabash, Ind., has been specially directed to preserving the alignment of the springs and to insuring the full lubrication of the springs and shackles. The result has been the development of spring suspension and creating of a spring lubricating system that has been patented.

All Service trucks have pressed steel channel sections carried on semi-elliptic springs, and the rear springs of the one 1½ and 2½-ton machines have the forward ends pivoted in the hangers and the rear ends are shackled, the driving and braking stresses being taken by the rear springs. The rear springs of the 3½ and five-ton trucks are shackled at both ends and the relation of the axles is maintained by radius rods. The driving and torque stresses are taken by the rods, which have full universal action, the forward ends being pivoted vertically to collars that rock on pivots on the hangers, and pivoted with balls and sockets at the rear axles.

Service Truck Spring Mounting.

The mounting of the springs of the two large trucks is unusual, but the construction is claimed to be exceptionally enduring. Heavy hangers are riveted to the frame and through the lower ends of the hangers large steel tubes extend. Between the webs of the forward hangers seated on the tube are the forward ends of the radius rods, which may rock on the tube. The tube ends are securely clamped in the hangers. On the outboard ends of the tubes are the lower bores of the spring shackles, which are retained by large castellated nuts.

The spring eyes are secured in the upper ends of the shackles by large bolts, that are hardened and ground, the bolts being drilled and fitted with oil cups with which the bolts are lubricated. The forward rear spring hangers also carry the rocker shafts for the service and emergency brakes, these being mounted directly ahead of the tie tube. With this construction the thrust of the radius rods

is always directly in line of the frame and the springs are free to move on the shackles outside of the frame so as to absorb fully the road shocks upon the wheels.

Spring and Axle Assembly.

The springs are seated upon the axle housing between saddles and pads, and secured by heavy clips that extend around the saddles and project through the pads and yokes under the housing, this making a very substantial assembly that cannot yield under stress to which it may be subjected. The globe seats for the rear ends are mounted between the spring clip yokes and the pads, where there is the least leverage from rod action and the greatest resistance to stresses. The claim is made that the frame floats entirely on the springs and that it is extremely well protected. The eyes of the spring are bronze bushed and the ends of the main and master leaves encircle the bushings, so that there is little probability of a spring failing from breakage of both leaf ends. In the event that one spring leaf breaks the vehicle can be used until the actual work of replacement is begun.

The rear spring suspension for the one and 1½-ton chassis differs slightly from what has been described, that of the smaller machine with forward hangers that are dropped below the frame with a tie tube extending through them. On the ends of the tie tubes of the springs are mounted the rear fenders. On the hangers are the pivots on which the springs are mounted, and they also carry the brake rods. The forward hangers of the 1½-ton chassis are not tied with a tube, but carry the spring pivots. The driving and braking stresses are taken by the pivots and the springs. The spring eyes are bronze bushed and the main and master leaves wrap the bushings. The spring pivots and the spring shackles at the rear are lubricated by oil cups.

Spring Alignment Is Positive.

The spring leaves are constructed with pressed cups on top and bosses beneath in the centers and through these cups and bosses are bolt holes. When assembled, bolts through the springs and small top plates seat the cups of all leaves in each other so that there can be no slip-

page of the leaves. The springs are mounted with saddles that cover the small plates and are seated on spring pads that fit the axle housings. The heads of the spring center bolts are in bores in the pads and the ends of the bolts extend to bosses inside the spring saddles, so that the bolts will retain the spring leaves, and as the ends of the saddles seat against the small plates there can be no movement of the springs. The springs are secured to the axles by heavy clips that encircle the saddles and extend through the pads and yokes, by nuts and lock washers. The assembly is such that while it is positive a wrench is the only tool required for disassembling.

Magazine System of Lubrication.

The lubrication of the springs of the 1½-ton chassis is a magazine system patented by the Service Motor Truck Co., which has proven so satisfactory that it is to be used on all Service machines - production facilities are increased. This system consists of specially designed spring shackles or spring brackets in which are cast magazines that will hold sufficient oil to adequately lubricate the spring pivots and shackles for at least a month. From these magazines the oil flows through drilled channels that are packed with felt which resist and regulate the flow. The outlets of the magazines are so located that the feed is by the splash of the oil in them from the movement of the chassis, and the flow is so long as there is need, but not constant. The oil reservoirs are large and can be filled from a measure, for instance, with any standard engine oil. The filler caps are large and are retained by spring pressure so that there is no leakage and foreign matter is effectually excluded from the lubricant. Claim is made that this system greatly simplifies spring oiling and increases the endurance of the chassis to a very marked degree.

NO TRUCKS TO GERMANY.

The small German automotive manufacturers have combined to head off an increased importation of American cars and trucks, the U. S. Department of Commerce is informed.



Service Spring Mounting for Hotchkiss Drive, from Left to Right: Double-Wrapped Eye and Magazine Oil in Rear Spring Front Hanger; Oil Magazine in Rear Spring Shackle; Manner of Installing Spring to Insure Permanent Alignment.

INTERNATIONAL GOOD ROADS TOUR ENTHUSES MICHIGAN AND CANADA

PROBABLY never before was the need of good roads so strikingly impressed upon the people of so large an area as by the Michigan Pikes Association's International Good Roads Tour, which covered Michigan and Ontario between July 14 and 29, everywhere teaching that improved highways mean better transportation and reduced living costs.

The story that this annual tour has told throughout Michigan was carried across the border and deeply interested the people of Canada, from members of Parliament to the humblest farmer. The transportation interests of Ontario did their part toward making the tour attract the people. At the mass meeting in Toronto speakers of national distinction from the two countries pleaded for roads. The caravan of 300 tourists drove their mission home to the dwellers in a large zone. No better blow for modern highways has ever been struck in that territory.

Untoward incidents of the trip, such as the breaking of five bridges by the trucks of the motorcade, may prove a blessing in disguise. These accidents are expected to arouse the various communities to a need of better bridges, as well as better highways.

It was the first time that American advocates of good roads have invaded the soil of a neighboring country to promote such a cause. The results are bound to prove the wisdom of the decision. The people of the adjoining country were thoroughly awakened to the need of highways fit for truck travel. In no other way could the objects of the association been so forcefully presented.

Needless to say the 16 trucks on the tour proved their utility and kept pace with the cars during long drives.

The tourists traveled roads not before

traversed by automobiles to stimulate construction of a highway on which motorists may travel through Ontario via Windsor, Toronto, North Bay and the Soo. It is hoped ultimately to bring about completion of the northern highway in Ontario so that tourists may motor through the summer resort country, entering Canada either at the Soo or Windsor and travel in a circle described by going from the Soo to North Bay and Toronto.

Holds 90 Road Meetings.

Over 90 road meetings were held on the tour, among the speakers being Hon. F. C. Biggs, minister of public works, Ontario; Hon. Albert Grigg, deputy minister of lands and forests; Dr. P. E. Doolittle, president Dominion Good Roads association; L. E. Allen, president Ontario Good Roads association; Horatio S. Earle, father of good roads in Michigan; Frank S. Rogers, Michigan state highway commissioner, and Capt. W. S. Gilbreath, promoter and founder of the Dixie highway.

A leading authority in the truck field, the advertising manager of one of the principal truck manufacturing concerns of Detroit, who was one of "the gang," has kindly written for MOTOR TRUCK his impressions of the tour, which follow:

"In telling the story of the Michigan Pikes Association International Good Roads Tour, held July 14-29, I am afraid I am going to sadly neglect the passenger car division. Being a dyed-in-the-wool truck enthusiast, my tributes to this remarkable tour are likely to favor the 'iron mule' brigade.

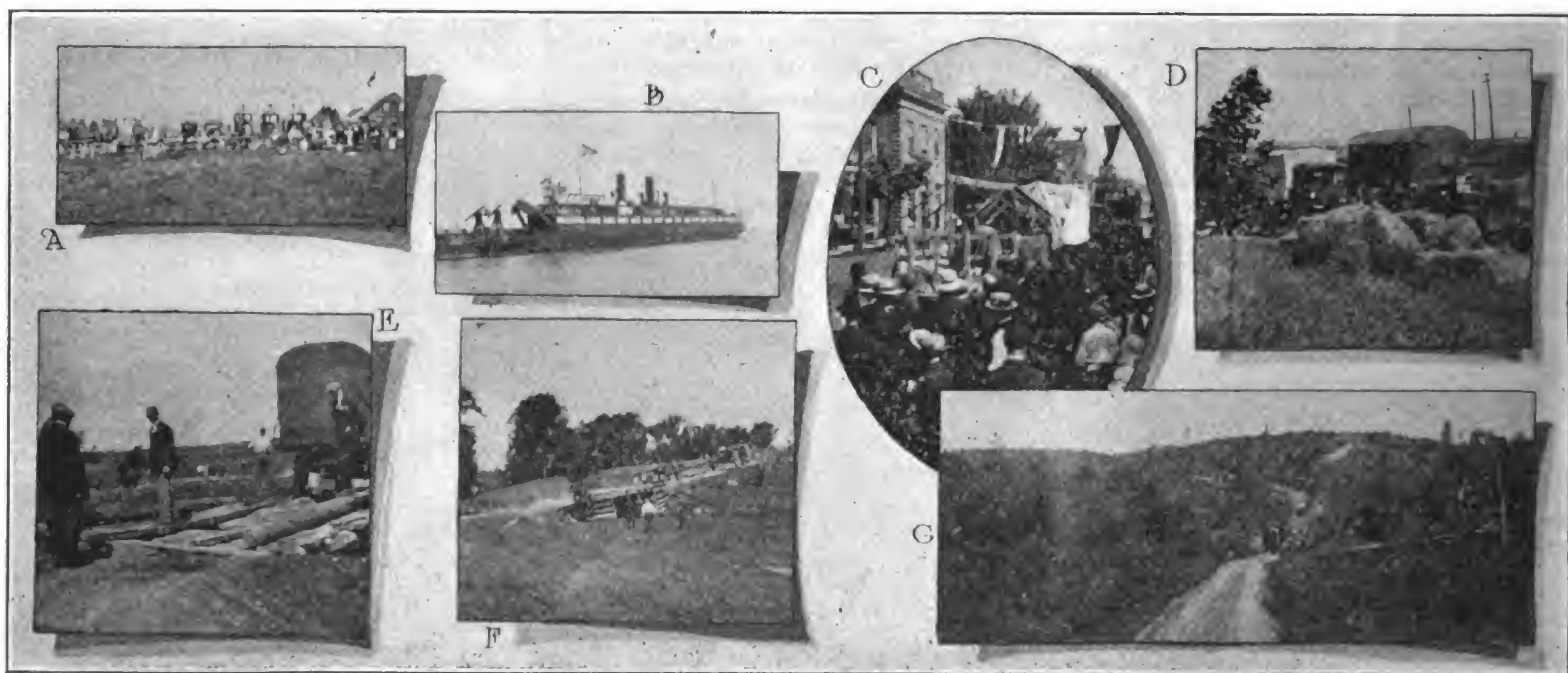
The Start on July 14.

"Crossing the Detroit river via ferry, on the afternoon of July 14, we proceeded to startle the natives of Walkerville and Windsor by making strange and loud

noises of every description. After the first spasm of joy making had subsided, we settled down to business and made ready for our first night's camp at Kenilworth park, notable race track, not forgetting, however, to take advantage of the wonderful meal our chef had prepared for us. Here we had our first real opportunity to inspect our kitchen equipment our own electric light plant and our very welcome shower bath truck. Each kitchen truck carried a full sized business like stove, a sink, running water and all other kitchen conveniences.

"There were three such units, and it was a good thing that the management figured on no less, because they always had about 300 hungry mouths to feed, three times daily. And for the light plant, we must confess it took little time for them to set up a complete camp lighting outfit that fairly made the place blaze. A very ingenious plan enabled the shower bath truck to properly care for eight men at one time, with plenty of hot and cold water and sufficient quantity of good soap with which to remove the dust of the day's travel.

"An early start, made possible only by the persistent efforts of 'Eddie' Edenburn, capable tour manager of long experience, in arousing us from deep and peaceful slumber, enabled us to reach Chatham for the scheduled noon stop. A very delightful luncheon by the ladies filled us with great endeavor to proceed to London for the night control. In this pretty city we were met by multitudes of warm, welcome people, including several proverbial 'Bobbies,' who directed us carefully to our resting grounds. I think we startled the sightseers by the prompt and efficient manner in which we established ourselves. The blanket baggage and tent trucks disgorged themselves of innumer-



Events of the Michigan Pikes Association's Good Roads Tour Told in Snap Shots: A, Kitchen Equipment Awaiting a Direct Attack; B, Car Ferry Between St. Ignace and Mackinaw City, Mich.; C, Crowd of Curiosity Seekers, Many of Whom Had Never Seen a Truck; D, Waiting to "Set Up" Camp and "Get Into the Hay;" E, One of Five Bridges, Broken in a Day; F, Trying Weak Bridges with Passenger Cars; G, Typical Country Through Which the Tourists Drove.

able pieces of carefully packed necessities and, after an evening of entertainment and question answering, we settled our weary bodies to rest.

Truck Drivers Eat in Style.

"As usual the trumpet roused us early and after a breakfast of good things we fed our iron chariots gas, oil and water and proceeded merrily on to Hamilton. Can you picture a hale, hearty and dirty bunch of truck drivers prancing joyfully into the Royal Connaught hotel for luncheon? I only wish I could insert here some of Glenn Kershner's wonderful motion picture films and allow you to see the hungry mob entering the portals of this noble hostelry. And we ate and ate and ate and were again ready for the beautiful drive into Toronto. Right at this point of my narrative I must tell you that Canadian people know how to welcome the stranger within their gates. The spirit was wonderful and never will a 'Piker' forget it as long as he lives. At Toronto we were 'dudes' and we slept in a hotel, between white sheets. Oh, boy, what bliss! Most of us splashed in tubs of delightful hot water and those with sunburn visited the drug stores and procured relief (?). So far, so good. The roads had been fine; in fact, I believe the management was playing with us, because during the next few days we sure struck some fine places to test out the ability of our drivers.

"Into Bracebridge amidst the tooting of horns and the shouts of the populace, for a one night stand at the race track. Your map will tell you that Bracebridge is in the center of that justly famous Muskoka lakes district. Jupiter Pluvius was not kind to us here, as he wept copious tears and partly spoiled our parade. However, the ladies took us for a boat ride on Sunday that firmly impressed on our minds the beauty of this wonderful country.

Hit Wet Clay Roads.

"At this point our noble tour manager laid stress on the fact that we could expect the roads to get 'better no faster' and he could not have been more truthful under any circumstances. Directly we left Bracebridge, headed for that wide awake town of North Bay, we struck some of the finest examples of clay roads, wet from rain, that I have ever seen. If there are any rules for keeping a heavy truck in the center of the road under such conditions, I wish some kind soul would send me a copy. In order to make the hills at all it became necessary to cut small trees and make a bed over which each truck could travel. Personally I know that our truck at one time turned around three times on the road and ended its wild perambulations by hanging over the edge of a cliff with a drop of many feet staring us in the face. Directly behind us came the Ford bandmen and with their kind assistance we succeeded in getting our iron chariot back on the road. There were many other such occurrences during that day.

"It was a tired and hungry bunch that drifted into North Bay that night. I can remember well how grateful I felt when I stuck my head into an ice cold pail of water and removed the mud from my weary body. And believe me the good

people of North Bay sure did feed us a wonderful dinner that night, one which we will never forget. It is not amiss at this time to say that the performance of the truck train had been remarkable. We had 16 units in line, all running in place assigned at the outset of the tour and they were proceeding in military fashion to do the job up in great style. There were many points along the route where many of the people got their first glimpse of trucks performing under the conditions prevalent.

Rebuild Five Bridges.

"Little did any of us truck men realize that the following day was to bring to us a new experience, but not one that we were unfitted for. We became during the day the finest collection of bridge builders that you ever met. Before we pulled into Espanola that night we had five bridges to our credit. In two instances did trucks go entirely through the light, inefficient structures, and it became necessary not only to replank the top section, but also to completely rearrange the underworks so that the heavy jobs

caught in Canada were gathered in by members of our organization. At least they tell us that they themselves personally know that there are no larger in captivity. Not being in the fish catching class I am afraid I will have to believe them whether I want to or not.

"When we started out, fresh and clean, the next morning, we all knew that it would not be long before we would be pulling into the Canadian Sault and we had heard many rumors of the wonderful time we were to have there. I think that most everyone was more or less anxious about this time to see the shores of good old United States, although such thoughts were never made public property.

"We must not forget, in our hurry, the warmth of our reception at Thesalon which was the last night stop before reaching the Sault. A large dance floor had been constructed at the park where we camped and several refreshment booths were in full swing so that the lively ones in the crew were well taken care of. Personally, we hit the hay, and it was new mown hay at that. The next



The Entry of the Denby Motor Truck Co., with E. T. Sutton, Advertising Manager, and C. H. Drude, Chief Mechanic.

could get across. I think that we taught the people in that district a thing or two about their roads that day. And sand, we pulled through mile after mile of the finest specimen of white sand that I ever saw. The leading trucks broke the road in fine shape, but the big tire trucks with the extra wide tread had plenty of work cut out for themselves. Let it be understood, however, that everyone pulled into Espanola in time to eat, at least. Espanola welcomed us in the usual Canadian style and a dance that evening claimed most of us.

"During the evening our fire truck made a demonstration and succeeded in getting itself nicely stuck in the river bottom. The combined efforts of several of our leading lights made it possible to release it after a few hours work and on the following day, which was Sunday, we staged a very realistic fire drill for the benefit of the Ford motion picture operator, which will shortly be flashed all over the country.

"It really should not be told, but on that Sunday some of the largest fish ever

day we pulled through the famous Bruce mines, which furnished the material for the wonderful roads that abound throughout Michigan. We ate our dinner that noon in the high school at the Canadian Sault, and it was some dinner. It was a great picture trip we had through the locks that afternoon and we finally wound up at the Country club for a delightful evening meal.

"That night we all misbehaved ourselves by tripping the light fantastic on the street pavement in front of the high school. All of the village belles were there and they tell me that there were never enough men to go around. The beautiful camp grounds afforded us at this city were nigh deserted until the wee small hours of the morning, so you may know that all enjoyed themselves.

Back in the Old U. S. A.

"Early the next morning we were told to report with our trucks to the ferry that was to remove us to the good old home soil. A very large and ungainly scow took us under cover and we were shortly after dumped into the United

States of America, bless her. Here we were subjected to another parade so that we might show the people at home that we were all there and we finally set down to another of those good meals at the Armory. Here the virtues of the truck train operators were extolled in no small measure by the officials and we were all obliged to make a bow before the entire audience. We pulled out for St. Ignace with a full complement, but during the morning the only serious accident during the trip occurred. One of the passenger cars hit a stray horse and completely turned turtle, pinning the occupants underneath. No one was seriously hurt, but one member of the party suffered painful burns. The big Goodyear tire truck came along soon after and gathered up the remains and carted it into St. Ignace.

"Here the big car ferry took us into her guiding care and we were transported across the Straits to Mackinaw City. At this point let me interject the information that our genial tour manager was forever reminding us that each day's trip was going to be easier now that we were home again, but for the life of me I cannot see where he got the information. Sand, hills, trails and other things partly disproved his statements.

Over Hills and Through Sand.

"I can say, however, that about this time the weak sisters in our organization were beginning to harden up and the manner in which things were being car-

ried on was truly wonderful. When we hit the sand, we hit it, and when we came to hills, we were there on all fours. The camera clicked merrily when the tough spots were encountered and I believe that in no truck tour yet conducted has there been such an abundance of material for the camera fiends.

"Cheboygan gave us a hearty welcome and we proceeded on in true army fashion to Carl Schmidt's farm. We slept in his spacious barn that evening among the new mown hay and we went to bed full of the finest beef barbacue that was ever cooked. I think some of the unwise attended a dance, but I know that the wise went to bed. The next day we encountered some of the hottest weather of the trip and it was a good thing it began to warm up because most of us had on all the clothes we could pack, and then some. But the sunburn was surely in evidence when we hit Bay City for the noon stop. They filled us up and sent us on our way with many a good word spoken for our success.

"At Alma that night we put on one of the noisiest entrances of the trip and the people of Alma came right back at us in great style. They dined us and then took us to a show and then gave us the Community hall to sleep in, which was fine. On the way from Alma to Jackson the next day we all began to realize that we were nearing home and the completion of the greatest truck tour ever staged. The country began to become familiar to

most of us and we could almost hear the whistles of our home town shrieking out the royal welcome that we were going to receive. At Jackson they treated us royally and at night they took us to a boxing exhibition that was very welcome to us all. At the end of the last day's run into Detroit we stopped at the Westwood Inn, about 12 miles from the city, and were served a full course dinner under the auspices of the Detroit dealers' organization. Here, also, we were met by numerous cars and some bands and also police escort and with every horn and whistle going strong we entered our home town in a full blaze of glory, thereby terminating the 1920 International Good Roads Tour.

"In conclusion, it is well to summarize some of the most salient facts of the tour with reference to the motor truck industry. I believe that the trip has absolutely proved to many of the skeptical the possibilities of long range truck usage that has not been realized before. It has shown the manufacturers that this method of demonstration is more far reaching in its scope than they have thought for. It has created a greater feeling of cooperation between the manufacturers of motor trucks, and last, but by far not least, it has shown that the only thing needed is to properly conduct such big movement to educate the people as to the uses of motor trucks in just such careful thought and cooperative management as was evidenced throughout this memorable trip."

WAR TRUCKS DETERIORATE.

P. G. Steenstrup, president of the General Motors Export Corporation, who is just back from a tour of Europe, states that sales of war trucks will temporarily limit the foreign demand for such equipment. He says that the disposal of the military equipment was poorly handled. Because of inability to get spare and service parts for American trucks sold wholesale to the French, much of this property has materially deteriorated in value.

CHEMICAL EXPOSITION.

A symposium on Fuel Economy and one on Materials Handling are on the program for the Sixth National Exposition of Chemical Industries at the Grand Central Palace, New York city, Sept. 20-25. Chemistry enters into every industry and there is general interest among manufacturers in this event. Four floors of the Palace, each a city block in dimensions, will be given up to the display for which there are already 395 exhibitors.

15 MILES PER GALLON OF GAS.

The W. K. Lovering Co., Salt Lake City, recently made a run of 160 miles with a Bethlehem $\frac{3}{4}$ -ton speed wagon, getting 15 miles out of each gallon of gasoline. The company distributes farm lighting equipment. The truck had a 33 per cent. overload and no attempt was made at a record. The truck was new and had not been tuned up to a hard job. The trip was from Salt Lake City toocatello en route to Twin Falls.

TRUCK PAYS FOR ITSELF THREE TIMES IN A YEAR.

Herman Malm of the Miller's Distributing Co., Rochester, N. Y., is authority for the statement that a $1\frac{1}{2}$ -ton Selden truck in the service of that company has paid for itself more than three times over in one year.

Mr. Malm says: "A little over a year ago we placed in service a $1\frac{1}{2}$ -ton Selden truck equipped with pneumatic tires. Since that time we have been very successful in making deliveries to all grocers within the city and the 10-mile radius of the city limits. According to our books the fixed charges on our Selden for the last four months of last year

amounted to \$165.89. The variable charges including driver's wages amounted to \$1135.80, making a total operation cost of \$1301.69. The truck traveled during that time 4725 miles, thus making a rate of 30c per mile, or \$14.36 a day. It would have taken six teams to do the work handled by this one truck and they would have cost us \$48 a day. This means a saving of \$33.50, or \$10,050 per year. As the original cost of our truck was \$3050, it has paid for itself three times over the first year."

The Cyclone Starter & Truck Co. will begin the production about Sept. 1 of one-ton trucks and Cyclone starters in a new factory now nearing completion.



Selden $1\frac{1}{2}$ -Ton Truck That Earned Three Times Its Cost for the Miller Distributing Co., Rochester, N. Y., in a Year.

ROAD HAULAGE PROMOTION PROJECTS

NEW YORK WILL INCREASE ITS SHIPPING FACILITIES BY BUILDING 18 PIERS

New York city's transportation worries may soon be lifted as the result of the approval by the Sinking Fund Commission of plans for the building of 18 new piers, which will make the port the finest in the world.

The plans provide for the building of 18 piers from 950 to 1025 feet in length along the North river between Vesey and Perry streets, replacing the 32 antique structures erected in 1871.

Between each of the new piers there will be a maximum vantage space of 300 feet and a minimum of 275 feet. Two of the new piers will be 100 feet wide, seven 150 feet wide and nine 125 feet wide.

The present route of the proposed vehicular tunnel to New Jersey is beneath the way between two ancient piers above Canal street. In the event of the sinking of a heavy vessel at the dock the vehicular tunnel would be in danger. To obviate this it has been decided to build a new pier directly over the tunnel in such a way that the tunnel will be protected.

The plans will take definite shape and the board of estimate will take the necessary financial action as soon as Murray Hulbert, the dock commissioner, returns from Europe, where he will inspect the water front development of Antwerp and other ports.

After 18 new piers have been completed the Staten Island water front development carried through and Jamaica Bay made a great terminal, the port of New York will stand unequalled anywhere.

TRUCKS CLEANING STREETS.

Motor fleets are fast replacing the "white wings" squadrons in Cleveland, Chicago and other cities. Shortage of labor is one cause which is forcing municipalities to recognize the value of trucks in street cleaning work. Only the other day Chicago needed 1000 men and could not get them at any price. As a result six more motor driven flushers and as many sweepers were asked for by highway officials. Three motor flushers and five sweepers are already working 24 hours a day. Three Acme 3½-ton trucks with 1000-gallon flushing units have been used in Cleveland for over a year. They work night and day and displace 12 teams and 24 men. Two more were ordered a few weeks ago.

M. T. M. A. MAY MOVE TO AKRON.

David Thomas, general manager of the Motor Truck Manufacturers' association, has been in Akron, O., recently looking up suitable headquarters in furtherance of a plan under consideration to move its activities from Chicago to Akron.

FEDERAL CLIMBS SIERRAS.

The other day a five-ton Federal truck stepped in and grabbed a mountain climbing job which 28 mules used to negotiate. Also the Federal did the task in one day against three for the mules. It was contended that the Federal or no other truck could take an immense boiler 60 miles up the Sierras to the Madera Sugar Pine mills from Madera, Cal., 60 miles away, and the nearest railroad point.

The roads are full of dangerous winding turns, often attaining a grade of 20 per cent., and several times it was necessary to chop down a fair sized tree and drag it behind the truck as an additional brake.

In another place the flume or wooden trough in which the logs are floated 60 miles down the mountain side to Madera had to be cut to allow the truck to pass under with its huge load.

A fleet of four Federals, running an average of 20,000 miles each per year, are in continuous use to keep in supplies the 800 men in this mountain town. Regardless of weather conditions they are on the road approximately eight months out of the year, bringing machinery for the mills and mail, food and clothing for the men.

BIG GOODYEAR LEGION POST.

One of the largest American Legion posts in the country is Akron Post, No. 209, made up entirely of employees of the Goodyear Tire & Rubber Co. who saw service in the world war. In a recent drive the membership was increased from 1000 to 1375.

STRONGER REPRESENTATION FOR TRUCK MANUFACTURERS ON N. A. C. C. COMMITTEE

The truck end of the automobile industry has been given stronger representation in the National Automobile Chamber of Commerce, Inc., through the action of President Charles Clifton in increasing the membership of the National Motor Truck Committee from seven to nine. This committee meets on the first Tuesday of each month, which is the day previous to the directors' meeting.

President Clifton's appointments follow:

Windsor T. White (White), chairman; George M. Graham (Pierce-Arrow), Victor L. Brown (Sterling), M. L. Pulcher (Federal), R. H. Salmons (Selden), Ray C. Chamberlain (Packard), A. J. Whipple (Diamond T), D. S. Ludlum (Autocar), D. C. Fennner (Mack), F. W. Fenn (N. A. C. C.), secretary.

The Brockway Motor Truck Co. of Pittsburgh has been incorporated with \$100,000 capital.

N. A. C. C. URGES STATES TO BUY EQUIPMENT AND MAKE SNOW REMOVAL PLANS

The National Automobile Chamber of Commerce, through its highway committee, of which Pyke Johnson is secretary, has issued the following timely bulletin as to making early plans for the removal of snow from highways this winter:

1. A careful review of the transportation situation makes it evident that during the coming winter the railroads will be confronted with congestion problems as great as, if not greater, than those which held up their freight movements last winter.

2. As before, so again, this will throw upon motor vehicles the necessity of hauling vast quantities of commodities over the highways and in addition will oblige manufacturers of motor vehicles to deliver their products to purchasers by the overland drive-away method.

3. Both of these considerations make it imperative that those highways over which the bulk of these commodities and the majority of these drive-aways will pass, be kept free from snow and ice at all times.

4. As a general thing such traffic passes over the highways under state control, although there are long strips of thoroughfares where counties, cities, towns or other types of authority exercise jurisdiction.

5. The highway officials of some of these states and other jurisdictions now have the power and appropriations necessary to care for snow removal from their highways during the winter of 1920-1921; the majority of them do not. It is therefore imperative that members learn how the matter stands in the case of highways in which they are interested and wherever no provision for this all-important work has been made, take active steps to point out to the authorities the need for looking after this vital matter a once.

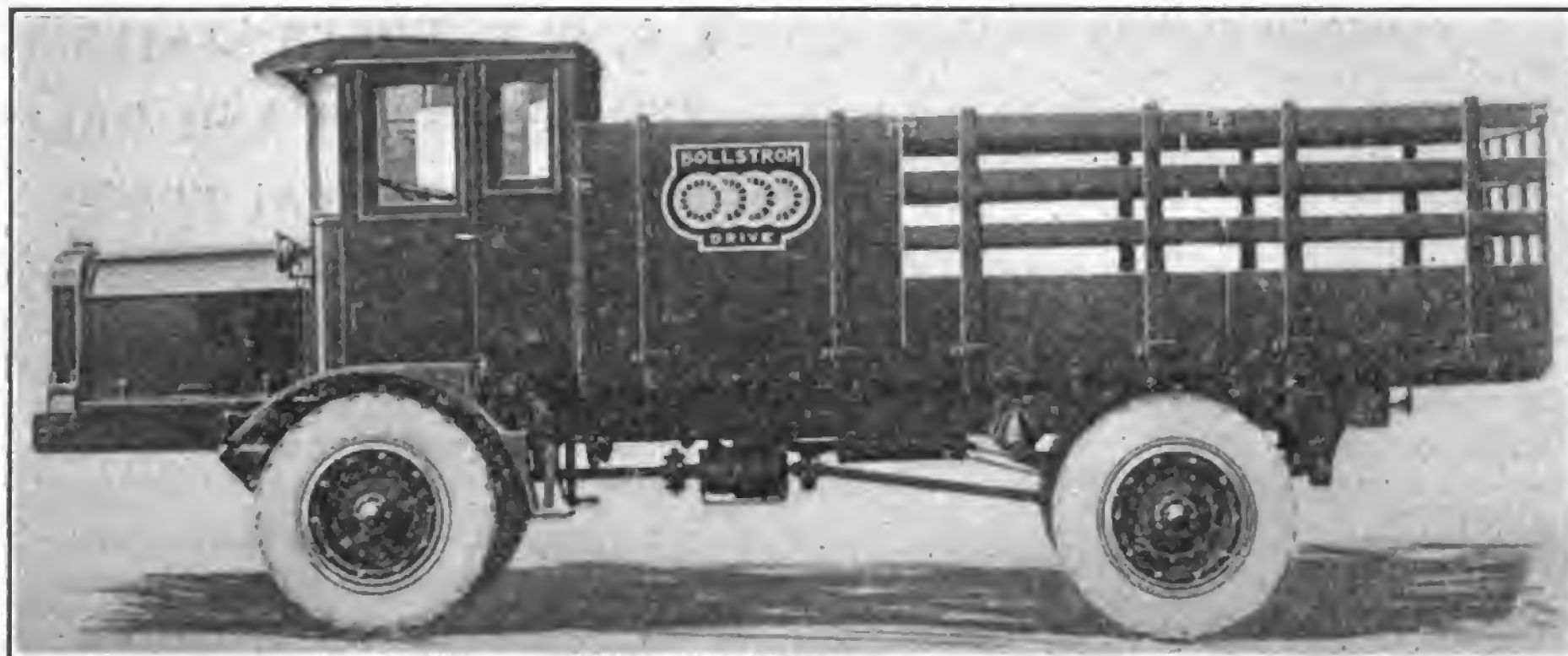
N. Y. TUNNEL TRAILER BOOSTER.

The Advisory Transportation Engineering Committee of the New York-New Jersey Interstate Tunnel Commission looks for the building of the proposed tunnel to bring semi-trailers, commonly known as tractor-trailers, into general use. The objective of all haulers is to move freight at minimum cost per ton mile and large motor truck fleet owners are expected to establish distributing depots, served by tractor-trailers.

A. G. SAVELLI RESIGNS.

A. G. Savelli, vice president of the Wichita Motors Co., in charge of exports, has resigned.

BOLLSTROM HEAVY DUTY TRUCK



Bollstrom Four-Wheel Driven Five-Ton Truck, with Short Wheelbase to Insure Quick Handling in Traffic and Limited Space.

MANUFACTURE of a single size of truck has been begun by the Bollstrom Motors, Inc., St. Louis, Mich., which is claimed to have an unusual range of utility and to combine all the essential qualities for both fast and heavy haulage, the only limitation being the type of body.

The Bollstrom truck is designed to have unusual speed and power, so that it may be used for any work where either or both of these qualities are necessary, a combination that is not often found in any type of power vehicle. The company specifies it as a high-powered, high-speed, heavy duty truck, but this statement would not ordinarily sufficiently define its full value as a transportation unit, for it is quite as well adapted for fast, long distance haulage as it is for short hauls with heavy loads without charge of any kind other than the shifting of a hand lever.

The chassis is driven by four wheels and it is so designed that whether or not freighted 45 per cent. of the weight is carried by the forward axle and 55 per cent. by the rear axle, and this load distribution insures that there will be positive traction in all normal driving conditions, while there is less probability of wheel slippage in abnormal roads.

Short Wheelbase for Quick Handling.

The chassis has a wheelbase of 144 inches, which is extremely short for a five-ton unit, but this makes for easier handling in limited space, a quality that has decided value in congested traffic, especially in piers and freight yards, or in narrow streets, and the large power and positive traction is insurance of quicker work in soft or yielding surfaces, or in wet or snow covered roads.

The chassis frame is 240 inches length and the engine is carried well ahead of the front axle, which affords front wheel traction when the machine is unloaded, but back of the driver's seat a 16-foot body can be installed without overhanging the frame, and this may be six feet width, giving a total platform area of 96 square feet. A body that will carry an extremely large load by bulk can be installed. The platform is 48 inches above the ground and the height of the top of the cab is 105 inches.

The power plant is a Hinkley engine, a

four-cylinder, water cooled type, designed especially for truck construction, which has cylinder bore of $4\frac{1}{2}$ inches and stroke of $5\frac{1}{2}$ inches, with a rating of 32.40 horsepower by the S. A. E. formula, which is claimed to develop 50 horsepower at 1400 revolutions a minute. The engine is cooled by a forced circulation of water through the cylinder jacket and a large radiator, the latter being cooled by a large fan, and the lubrication is by a pressure system that insures distribution to all bearings and the timing gearset, the cylinders, pistons, cams and valve tappets and valves being lubricated by the throw-off of oil from the crankpins. The source of the ignition current is a high-tension magneto and the engine is governed and equipped with an electric starting and lighting system. The engine is suspended at three points.

Double Reduction Transmission System.

The power transmission system consists of a nine-plate dry disc clutch, which drives a short straight-line shaft fitted with universal joints that is coupled to the main shaft of a Cotta constant-mesh type transmission gearset. The gearset is a standard type, having four forward speed ratios and reverse. Near the gearset case is a unit original with the Bollstrom design known as a "transfer case," and these are mounted together on a sub-frame and coupled by a flexible joint. The "transfer case" has two gear ratios, one of which is direct and through which the chassis may be driven with the usual changes afforded by the transmission gearset. The low ratio of the "transfer case" affords a second reduction through the transmission gearset, so that there is available what is practically eight gear ratios, or double the number afforded by the conventional transmission system.

The power is transmitted from the "transfer case" to the two driving shafts that extend to the front and rear axles by two silent chains, which are $\frac{3}{4}$ pitch and $4\frac{1}{2}$ inches wide. The engine, main shaft and the gear cases are offset with reference to the driving shafts, which are in the center of the chassis frame. The transfer case is driven by a positive clutch. Including the reduction of the transfer case the ratios range from 68 to

one to 5.76 to one, this specifying the engine and road wheel speeds, and the vehicle speed range is from two to 29 miles an hour. The power available is increased with the reduction of gear ratio at a given engine speed.

The claim made for this chassis is that with the unusual variance of speed and drawbar pull practically any work can be undertaken with minimum fuel consumption, and that there is no loss of power from wheel slippage. The chassis is equipped with a power air pump, used for pneumatic tire inflation, a power take-off at the transmission gearset case for body hoist or winch for hoisting. The equipment, in addition to what has been stated, includes electric tail and inspection lamps.

FREE INSURANCE FOR TRANSPORT EMPLOYEES.

The Transport Truck Co., Mount Pleasant, Mich., has further cemented the bond of loyalty and cooperation which prevails between the company and its army of truck building experts by the recent gift of free life and accident insurance to employees. Those with the company three months get a \$250 life insurance policy and this is increased until it is made permanent at \$1500 after three years of service.

In addition to the compensation insurance which covers the employee only while he is at work in the plant, each is given a sick and accident benefit insurance policy covering any illness or accident which may befall him. The payments amount to 60 per cent. of his salary and is effective after the second day of disability.

CRANKING TRUCK ENGINE.

Before cranking the engine the driver of a motor truck should be sure that the spark lever is fully retarded and that the gears are in neutral. If it is attempted to crank the engine with the spark lever advanced the chances are that the engine will back fire, possibly in a broken arm to the operator. Furthermore, if the driver succeeds in cranking the engine when it is in gear the truck may start and run over him and cause considerable damage to the car and other property as well.

TRUCK'S RELIABILITY SHOWN.

A two-ton Service truck owned by William Winkler and engaged in making regular suburban hauls for the Steele-Weedeles Co., wholesale grocers in Chicago, operated 153 working days out of a possible 154 in the six months ending Jan. 1, 1920, covering a total of 7402 miles. The truck makes regular daily deliveries to retail stores and makes 30 stops. The average run is 48.39 miles a day. It has proven a time saver and has helped increase the company's business.

GRANT MODEL 17 1½-TON TRUCK

A NEW manufacturing policy has been established by the Grant Motor Car Corporation, Cleveland, O., which has discontinued production of the series of trucks it had been building and has concentrated on the single model 17, which is 1½ tons capacity. The intention is to produce this in large numbers.

This machine is 140 inches wheelbase and the tread is 56 inches. The chassis weighs 3550 pounds and the allowance for body is 1050 pounds. The load is distributed so that 15 per cent. is carried on the front axle and 85 per cent. on the rear axle. The price for the chassis is \$2675.

The new type is expected to meet the demand for a machine that can be driven fast and will be economical in operating and maintenance cost. Its maximum driving speed is not specified. The design is conventional and the truck will have pneumatic tire equipment, 35 by five-inch forward and 38 by seven-inch rear. It will be constructed of well known units, which will include Continental engines, Modine radiators, Carter carburetors, Splitdorf magneto, Pierce governor, Brown-Lipe clutch and transmission gearset combined with the engine in a unit power plant; Savage frame, Perfection springs, Peters universal joints, Torbensen internal gear rear axle, Columbia front axle, Jacox steering gear, Royer wheels, Remy generator and starter and Willard battery.

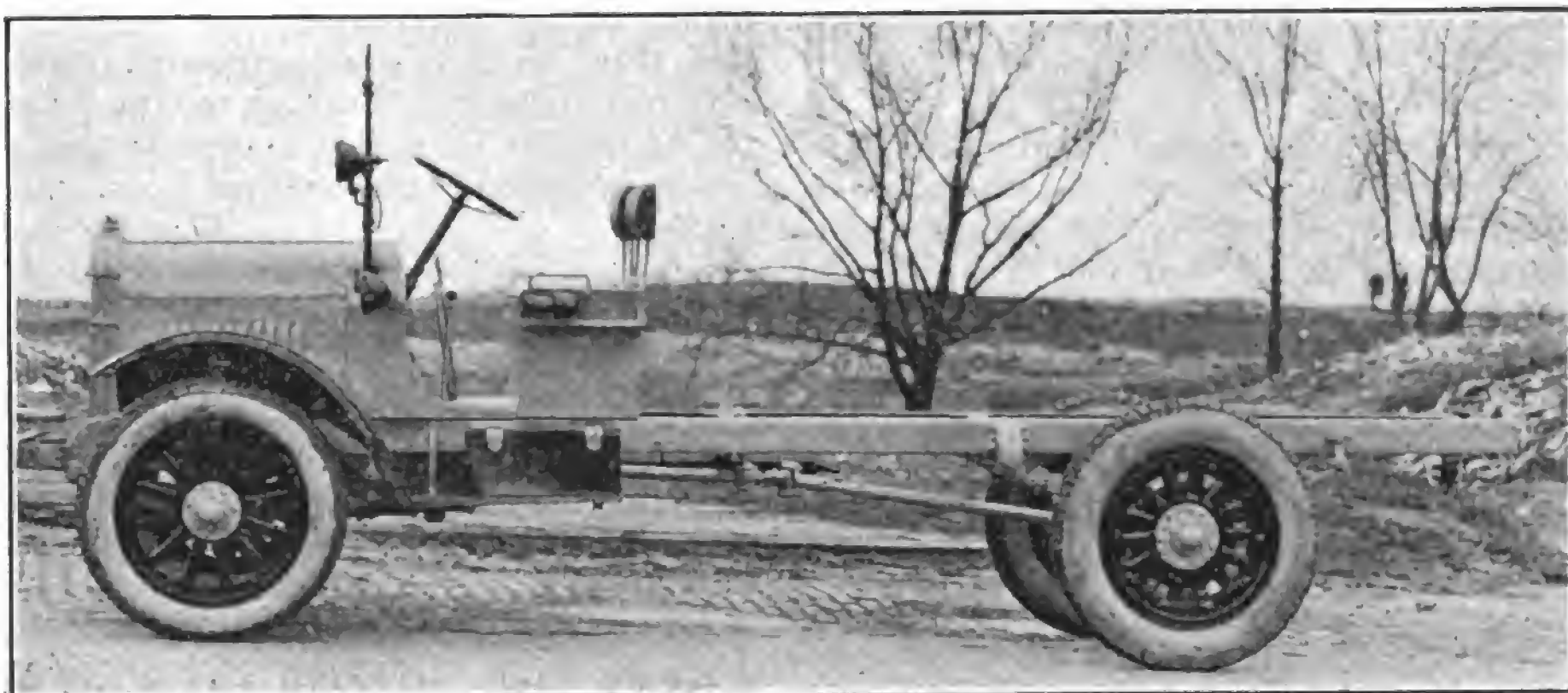
The engine is a four-cylinder, water cooled type, with the cylinders cast en bloc, having cylinder bore of 3¾ inches and stroke of five inches, having 22.50 horsepower rating by the S. A. E. formula. The maker claims it will deliver 30 horsepower at 150 revolutions a minute. The engine is a detachable head type with the valves at the right side. The

lubrication is a combined pressure and splash system, the oil being forced by a pump to the three crankshaft bearings and timing gearset, and the cylinders, pistons, crankpins, wristpins, camshaft bearings, cams and valve tappets are lubricated by splash of the connecting rods in the oil troughs in the base of the crank chambers. The oil reservoir may be drained and the oil pump may be removed for cleaning when desirable.

supplied by a vacuum feed system from a tank under the driver's seat.

The clutch is a dry plate multiple disc construction, which is combined with a selective sliding gear type transmission gearset affording four forward speed ratios and reverse, with the third ratio direct.

The driving shaft is equipped with all-metal universal joints and is coupled with the pinion shaft of the Torbensen



Complete Chassis of the Model 17 1½-Ton Grant Special Delivery Truck, on Which Production Is Now Concentrated.

The engine is cooled by a thermo-siphon circulation of water in the engine jacket and through a radiator with cast top and bottom tanks and a Modine "Spirex" cellular cooling section, and by a fan driven by a belt from the magneto drive shaft. The source of ignition is a Splitdorf high-tension magneto to one set of spark plugs, with manual spark advance, and the standard equipment includes the Remy two-unit starting and lighting system with a six-volt, 135-ampere hours battery. The governor is driven from the drive shaft. The fuel is

internal gear driven axle. This is a standard design, as is the front axle, a steel drop forging. The frame is a rigid type and it is strongly reinforced with cross members and gusset plates. It is suspended on semi-elliptic springs, and the braking and driving stresses are absorbed by these members.

The steering gear is located at the left side of the chassis and it is conventional. The service brake shoes are external contracting on drums on the rear wheels and the emergency brake shoes expand within the same drums.

POWER FLUSHER AND SPRINKLER EQUALS 20 MEN, SIX TEAMS.

The Morton Motor Car Co., Denby dealers at Windsor, Ont., has just delivered to that city a 1000-gallon combination flusher and sprinkler unit. The sprinkler heads throw a 60-inch fan-shaped, horizontal stream ahead of the truck. The chassis is a standard five-ton model 210 Denby. A heavy duty motor mounted directly back of the driver's seat furnishes the power for the flusher and also operates the mechanism for filling the tank at the rate of 200 gallons per minute. One flusher does the work of 20 men and does it easier and cheaper. It also replaces six horse drawn vehicles.

BANKERS OPPOSE LONG PERIODS FOR TRUCK PAYMENTS.

Banks in Los Angeles, Cal., are protesting against the 18 months period allowed by some dealers for truck payments. The dealers say that many buyers pay for trucks out of their earnings and the longer period allows them to meet the payments promptly.

DETROIT TRUCK OPERATOR FAVORS "GREEN" DRIVERS.

Thomas O'Brien, who keeps a large fleet of trucks on the go in the cartage business in Detroit, prefers "green" drivers to the so-called experienced brand. In a recent issue of "Pep Sheet," published by the Detroit Transportation association, he says in part:

"My experience has been that a 'green' man is an apt pupil and is always open to suggestions. He knows nothing about a truck, and has no desire, or fears to tamper with the parts about which he does not understand. Modern motor trucks are practically fool-proof, and if sufficient lubrication, water and fuel is furnished the driver does not require a diploma as a graduate mechanic.

"After interviewing the applicant for a position as driver, and I feel certain that the man is sincere in his desire to work and will remain in my employ, I send the 'green' man out on a truck, together with an experienced mechanic. All of the truck working parts are explained to him. He is instructed as to proper lubrication and the necessity of keeping the

radiator well filled with water. The driving operations are next explained to him. I have found that after one or two days training the novice is quite well able to handle the truck. I impress upon the new driver's mind that when he goes on a job he must remain on his truck at all times and should render assistance, as far as possible, in loading or unloading his truck."

8000 RHODE ISLAND TRUCKS.

Up to Aug. 1 in Rhode Island 8000 trucks had been registered. The total motor vehicle registration was 43,700, a gain of 25 per cent. over 1919. Chief Clerk Wellington of the automobile department states that the increase in number of registrations is more manifest where new road construction has been carried on to the greatest extent.

CITY POSTOFFICE MOTORIZED.

The Lowell, Mass., postoffice recently got five new motor trucks, which completed the motorization of the department in that city.

NEW PLANTS AND EXPANSIONS

GRAMM-BERNSTEIN CAPITAL INCREASED \$3,500,000 TO MEET ORDERS

Directors of the Gramm-Bernstein Motor Truck Co. at a meeting held July 31 at the Lima, O., plant, voted to increase the capital stock from \$1,500,000 to \$5,000,000, the entire amount to be issued as common stock. A stock dividend of 50 per cent. was declared out of surplus earnings to the common stock holders of record.

The increased capital required to care for its expanding business has been made necessary by the heavy volume of orders. Earnings of 25 per cent. on the common stock have been reaped in each of the last five years. The members of the large organization built up in recent years will be permitted to share with Messrs. Gramm and Bernstein in this growing institution and a limited amount of the stock will be offered the public.

RECORD STERLING OUTPUT.

The Sterling Motor Truck Co. again reached a production record in June, making a substantial increase over its May output of 250 trucks, which was the best previous mark. The demand for its product is far greater than ever before in the 12 years of its history.

A unique feature of the clamor for Sterlings is the big call from abroad, despite the fact that foreign business has not been pushed during the period when the company has been unable to supply the home demand. An order has been received this month from Java for 30 2½-ton Sterling trucks, with pneumatic tire equipment. Two young mechanics recently arrived from Denmark to study the construction and maintenance of the truck in order to give adequate service to the many owners of Sterlings in that country.

HALTS COMMERCE PRODUCTION.

The Commerce Motor Car Co., Detroit, manufacturer of Commerce trucks, has closed its machine shop, chassis and frame divisions until Aug. 15 because of inability to get parts and materials in sufficient quantity. The assembly division is running at top speed and will continue to do so until it has caught up with the other divisions, when the entire plant will again be reopened.

NOBLE PUTS OUT ¾-TON MODEL.

The Noble Motor Truck Corporation, Kendallville, Ind., will be in production within the next 90 days on a new model ¾-ton "Speed Wagon" This truck will supplant the company's present one-ton model. Specifications of this new product will appear in these columns at an early date.

YALE & TOWNE CO. TO BUILD HUNT ELECTRIC TRUCKS.

The Yale & Towne Manufacturing Co., Stamford, Conn., has bought the industrial electric truck division of the C. W. Hunt Co., Staten Island, N. Y., and will install new machinery in its plant preparatory to manufacturing trucks of the Hunt type. The Yale company already produces electric hoists and will now be able to provide for the transfer of heavy loads, either horizontally or vertically. The Hunt truck is used primarily in railway terminals and factories for the transfer of freight or heavy materials and is often equipped with electric hoists and cranes.

HURON TRUCK OUT SOON.

The Huron Truck Co. has been formed at Bad Axe, Mich., and has leased a factory in which 50 trucks will be produced this year. F. W. Kinde is president and W. R. Lyons vice president.

VREELAND MOTOR CO.'S NEW PLANT TO BE COMPLETED EARLY COMING FALL

The Vreeland Motor Co., manufacturer of Ultimate trucks, will move into its new plant, on Chestnut avenue, adjoining the Lehigh Valley railroad in the Irvington district, Newark, N. J., late this fall. Until that time it will continue in its leased factory at 407-9 Elizabeth avenue, Newark, where it has carried on manufacturing operations for over a year.

The new factory is the first owned by the company, which preferred to create production, open a selling field and have its enterprise safely launched before tying up its working capital in buildings. The engineering work was completed in 1916 and dealers were established in 1918. The seven-acre site for the new plant is admirably located in the manufacturing district. The structure is principally of one-story, saw-tooth construction and is modern in every detail.

The executive offices are in the north front of the building, which is separated into an east and west wing by the main grand entrance and display floor, which is a distinct and separate unit of the structure. The first units immediately adjoining the executive offices constitute the company's plans for building this year. This provides 30,000 square feet of floor space, which answers present needs and spring production. The construction will be extended next fall and thereafter as needs require. The plans as drawn permit a connected unit plant when the entire structure is completed.

Men experienced in large operations are sponsoring the activities of the Vreeland Motor Co., which is being developed along sound lines and which promises to be an important factor in the truck industry.

SEWELL CUSHION WHEEL MORE THAN DOUBLES BUSI- NESS OF 1919

The Sewell Cushion Wheel Co., Detroit, is reaping a large harvest from the big sales expansion programme inaugurated early in the year. Sales for the first six months have jumped 136 per cent. over the same period in 1919. Factory extensions have kept pace with the sales expansion. Early in the year 20,000 square feet of additional floor space was secured in the rear of the plant and 10 acres of land adjoining the Detroit terminal railroad was purchased. The first unit of a completely equipped factory and administration building on this site has already been completed and is in operation.

Sales offices have been opened since the first of the year in Los Angeles, San Francisco, Portland, Ore.; Seattle, Butte, Salt Lake City, Atlanta, Memphis, Nashville, Akron, Steubenville, Wheeling and New Orleans.

A national account division was recently established under the direction of James V. Lyons, formerly central western representative of the American La France Fire Apparatus Co., Elmira, N. Y. He has opened offices at Chicago.

BIG HEIL CO. ADDITION.

The Heil Co., Milwaukee, Wis., maker of steel dump truck bodies, compartment truck tanks and hydro hoists, is rapidly completing an addition to its big plant, which will give a total factory capacity of 150,000 square feet. The new addition, 136 by 260 feet, will contain two crane runways, 40 and 50 feet, for 10-ton cranes. This change will put seven 10-ton cranes in operation at the plant.

The new addition is to be used for stock room and new machinery for cutting steel is being installed. Part of the space will be devoted to mounting truck bodies, hydro hoists and compartment truck tanks.

In this addition considerable space will be devoted to the manufacture of gasoline storage tanks in which field the Heil Co. is a leading manufacturer.

TO MAKE AIR BRAKES.

The McNerny Air Brake Co. has been incorporated at Chattanooga, Tenn., with \$100,000 capital to manufacture air brakes for all type of gasoline-driven cars, trucks and trailers. The incorporators are Clyde J. McNerny, Joe V. Walker, Eugene B. Cannon, Floyd Estill and Raymond J. Bork.

TO BUILD BAY CITY BODIES.

The Bay City Auto Body Co., Bay City, Mich., builder of truck bodies, is enlarging and remodeling new quarters which it will occupy Aug. 1. Production of at least two a day is planned at once.

PROJECTED BY TRUCK INDUSTRY

COLUMBIA AXLE CO. GETS MORE MANUFACTURING SPACE.

The Columbia Axle Co., Cleveland, O., maker of Columbia one-piece-housing rear axles and front axles, has outgrown its present quarters, now being at maximum capacity of \$1,000,000 a month, and to catch up with orders has acquired the land and buildings of the Properties Co., adjoining its present plant. These holdings comprise 8½ acres of land, with a four-story and a two-story factory building. The use of 300,000 square feet of floor space for immediate use is thus secured. Present unfilled orders can now be taken care of, as well as the necessary expansion. The deal involved about \$1,000,000.

E. H. Parkhurst is vice president and general manager of the Columbia Axle Co. and will continue in that capacity. W. R. Hopkins is president of the Columbia Co., Ben F. Hopkins is secretary-treasurer, R. E. Fries is chief engineer and general sales manager, and R. J. Goldie is factory manager.

The product of the Columbia Axle Co. will continue to be axles exclusively. It will do a general business in passenger car and truck sales, both front and rear, under the Columbia trade mark. The original company was organized in 1914, doing \$136,000 of business during that year.

PNEUMATICS ON ALL BETHLEHEM ¾-TON TRUCKS.

Bethlehem Motors Corporation, Allentown, Pa., is fitting all of its ¾-ton models with pneumatic tires. Of the 1½-ton model, 90 per cent. go out of the plant equipped with air-filled tires. The 2½-ton models are 80 per cent., and in the 3½-ton class more than 30 per cent. are so equipped. There is every indication, according to C. R. Newby, general sales manager of the company, that the proportions will rapidly near the 100 per cent. mark on all sizes above the ¾-ton models, as demands show gradual gains for pneumatic equipment daily.

BIG FRANKLIN SALES.

The H. H. Franklin Manufacturing Co., manufacturing Franklin cars and trucks, reports net sales for the six months ending June 30 of \$17,238,936, an increase of 92 per cent. over the total of \$8,950,290 for the first half of 1919. Net profits after taxes were \$1,349,203.25, equal to \$6.47 per share on the common stock. Sales for the first six months amount to 73 per cent. of the total sales for 1919.

HARVESTER PLANT NOT TO MOVE.

W. R. Dray, general superintendent of the International Harvester Co.'s truck factory at Akron, O., denies the rumor that the plant proposes to move to Rockford, Ill. He says the works are permanently located at Akron.

SINCLAIR CONSOLIDATED OIL CORP. INCREASES ITS DIRECTORATE TO 23

The Sinclair Consolidated Oil Corporation has increased its board of directors to 23 members, created an executive committee of 10 and designated a finance committee of eight, the latter to include several men who are not directors of the company.

Among the new directors are: John A. Spoor of Chicago, chairman of the board of directors of the Chicago Junction Railways and Union Stock Yards Co., and Elisha Walker of Blair & Co., New York. Both of these men will serve on the executive committee and Mr. Walker will serve on the finance committee.

Edward R. Tinker, vice president of the Chase National bank, and Theodore Schultz of 14 Wall street, New York, are the only two members of the finance committee, aside from the company general counsel and general auditor, who are not also directors.

The new board of directors consists of the following: C. A. Braley of Kansas City, Edward H. Clark of San Francisco and New York, William E. Corey, chairman of the Midvale Steel Co.; C. E. Crawley of Tulsa, Joseph M. Cudahy of Chicago, J. Fletcher Farrell, treasurer; Samuel L. Fuller of Kissel-Kinnicutt & Co., D. L. Hooper and W. H. Isom, vice presidents; Daniel C. Jackings, managing director of the Utah Copper Co.; E. R. Kemp of Tulsa, William P. Phillips of J and W. Seligman & Co., Mark L. Requa, formerly general director of oil division, United States fuel administration; E. W. Sinclair, president Exchange National bank, Tulsa; H. F. Sinclair, president; John A. Spoor, Frank Steinhart, president Havana Electric Railroad, Light & Power Co.; Col. William Boyce Thompson, Elisha Walker, A. E. Watts, vice president; Harry Payne Whitney of New York, Albert H. Wiggin, chairman Chase National bank, New York; R. Thornton Wilson of R. T. Wilson & Co., New York.

The executive committee is composed of Messrs. Corey, Farrell, Fuller, Sinclair, Spoor, Thompson, Walker, Whitney, Wiggin and Watts.

The finance committee is composed of Messrs. Farrell, Phillips, Shultz, Sinclair, Tinker, Walker, G. T. Stanford and P. W. Thirtle.

TO MAKE AXLES AT SPEARS PLANT AT WHEELING.

The Wheeling Axle Co. has been formed at Wheeling, W. Va., and will take over the old plant of the Spears Axle Co., which has been a part of the Standard Parts organization. The incorporators are George R. Hungerman, R. E. Ritz, Charles Ritz, J. S. Jones and Louis Ritter. The equipment of the works will be carried out as quickly as possible to insure early production.

BOSCH CORP. EXCLUSIVE GRAY & DAVIS SELLING AGENT.

Stockholders of Gray & Davis, Inc., Boston, Mass., have authorized an arrangement whereby the American Bosch Magneto Corporation, Springfield, Mass., has become the exclusive selling agent of the starting, lighting, battery ignition system and other automotive accessories manufactured by the Boston concern. Bosch magneto officials are already busy enlarging manufacturing plans and inaugurating an active sales campaign.

Gray & Davis, Inc., employs 1500 at the Boston starting and lighting plant and 500 at the Amesbury, Mass., plant, where automobile lamps are manufactured.

L. M. AXLE CO. IN NEW HANDS.

George M. Durell and W. H. Cowdrey of the American Fork & Hoe Co., have acquired control of the L. M. Axle Co., Cleveland, a \$1,500,000 corporation, which has purchased a 15-acre tract of land in Cleveland for a factory. The company was formed by Leo Meleanowski, former designer and factory manager of the Winton Co., and later with the White Co., to manufacture several types of axles of his design. In addition to these axles the company will also put on the market a special automobile wheel which is claimed to be lighter than wood and stronger than steel.

CAPITOL MOTORS EXPANDS.

The Capitol Motors Corporation, Fall River, Mass., which is in production on one-ton, two-ton and five-ton trucks, has increased its capitalization from \$250,000 to \$1,500,000. The company is financing its own enterprise, stock being disposed of only through company officials and salesmen. A new and spacious plant on Bay street was recently purchased. A production of 1500 trucks a year is looked for when the manufacturing peak is reached.

FEDERAL PLANT HUMMING.

The Federal Motor Truck Co., Detroit, has not laid off a man, is rushing to completion a new building with 60,000 square feet of badly needed space and is actively engaged on the greatest production schedule in its history. That is the company's answer to reports that the plant was to close. In addition to a big home demand the foreign business of the company is growing with amazing speed.

PRODUCING PIONEER TRUCKS.

Pioneer Automobile Truck Co., Chicago, is to erect a new factory building at Valparaiso, Ind., which will be 100x300, one story in height, of the monitor type. Trucks are now being turned out in temporary quarters.

WINTHER SPECIAL DELIVERY TRUCKS

PRODUCTION of a new chassis having load capacity of one ton has been begun by the Winther Motor Truck Co., Kenosha, Wis., that is known as the "Delivery Special," that is intended for fast work and is supplied only with pneumatic tires. The design has been developed to have extreme endurance and it has been simplified to afford labor economy with reference to care. The operating cost is claimed to be unusually low, and this applies particularly to fuel and oil consumption.

The engine is a Wisconsin, a four-cylinder, water cooled, L-head type, having cylinder bore of $3\frac{1}{2}$ inches and stroke of five inches, which is rated at 19.60 horsepower by the S. A. E. formula. The claim is made by the manufacturer, however, that the engine will develop a maximum of 35 horsepower, and this is largely in excess of all practical needs.

Detachable Head Type Engine.

The engine is a detachable head type, the cylinders being cast en bloc with the upper section of the crankcase integral. The water jacket is exceptionally large. The crankshaft is a three-journal type. The engine is cooled by a thermo-syphon circulation of water through the cylinder jacket and a large radiator with cast top and bottom tanks with a tubular cooling section that is easily removable for cleaning or repair, and by a four-blade, 16-inch fan. The engine is lubricated by a combination pressure and splash system. The lubricant is drawn from the reservoir after filtration and forced by a gear type pump through manifolds to the crankshaft and camshaft bearings and to the timing gearset. The excess oil drains to the base of the crank chamber and is distributed by splash to the cylinder and piston walls, the wristpins, the cams, valve tappets and valves.

Electric Starting and Lighting.

The carburetor is a Stromberg with the hand lever and foot accelerator control and the fuel is supplied from a cylindrical tank having 14 gallons capacity located under the driver's seat. The ignition system is a Westinghouse distributor, the current being supplied from a Willard storage battery. The engine is equipped with a two-unit Westinghouse lighting and starting system. The generator charges a battery mounted on a running board. The starting motor is en-

gaged with an external spur in the rim of the flywheel by a Bendix gear clutch actuated by a button switch operated by foot pressure. The head lamps are mounted on the fender brackets. On the instrument board before the driver is the combination lighting and ignition switch, an ammeter, and the fuse block. The lights are controlled by a switch to afford either bright or dim. The tail and dash lamps are electric. All of the wiring is steel armored cable and is protected against wear, moisture and oil or grease.

Power Transmission System.

The engine is combined with the clutch and transmission gearset in a unit plant that is suspended at the front on a trunnion and at the rear on support arms that are carried on the frame side members. The clutch and gearset are both Warner products, the former being a multiple disc multiple type with the throw-out collar bearing in an oil bath, while the transmission gearset is a selective sliding gear construction having three forward speed ratios and reverse, the low gear ratio being 3.24 to one and the reverse ratio 4.25 to one.

The drive from the gearset is by a tubular shaft with a Peters universal joint at either end that is coupled to the pinion shaft of a Clark internal gear driven rear axle. The load is carried by an I section dead axle and the power is transmitted through bevel gears and a differential gearset and jackshaft, spur pinions on the outer ends of the shafts meshing with internal gears bolted to the hubs of the rear wheels. The bearings throughout the axle are a roller type, including the wheel spindles. The front axle is a drop forged steel I section, heat treated, with heavy steering knuckles and hardened steering pivots. The wheel spindle bearings are a taper roller type.

Frame and Chassis Details.

The frame is rolled steel channel section, five inches deep, with wide webs, which is strongly constructed with cross members and gussets, the front bumper being integral with the frame. The frame is 30 inches wide and there is eight feet six inches space behind the driver's seat without overhanging the frame. This is suspended on semi-elliptic springs having bronze-bushed eyes, with hard-

ened and ground pivot and shackle bolts.

The steering gear is a screw and split nut type with 18-inch hand wheel, located at the left side, with the ignition and throttle control levers on a sector within the wheel rim. The control is conventional; the service brake shoes are external contracting on drums on the rear wheels 14 inches diameter and two inches wide, and the emergency brake shoe is external contracting on a drum on the driving shaft directly back of the transmission gearset. All parts of the chassis are lubricated by an Alemite system of greasing.

The wheels are wood, artillery type, 12 spokes to a wheel, which are fitted with demountable rims, and are shod with straight side cord tires, 34 by $4\frac{1}{2}$ inches forward and 35 by five inches rear.

The equipment includes driver's seat, front and rear fenders and full length running boards, front bumper, jack, set of tools, hand pump, tire irons, extra tire rim, speedometer and electric lights.

FWD MAKES GASOLINE RECORD.

The annual report of the postmaster-general contains some cost and operation data compiled by the Postoffice Department in which a four-wheel drive truck is given the greatest mileage per gallon of gasoline on three-ton trucks. The report embraces cost records on four well known rear drive trucks and one FWD which have been used in mail and parcel post delivery work.

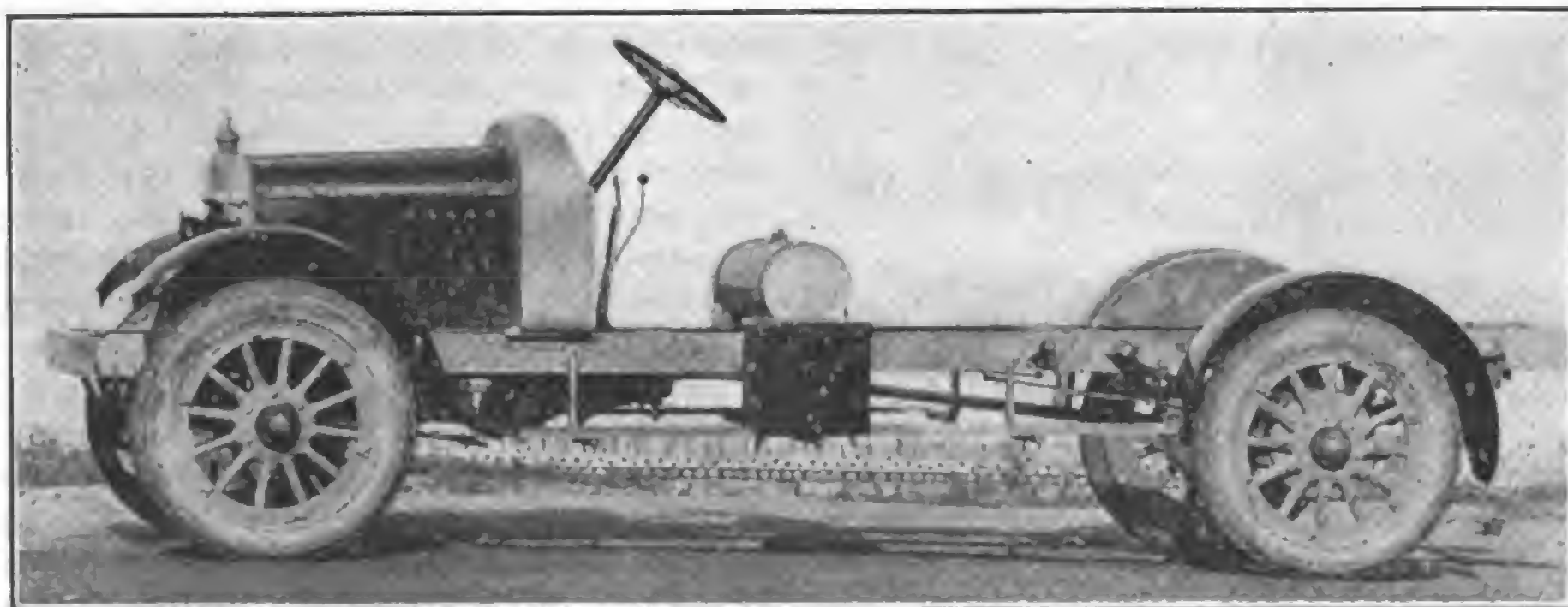
Evidence of the increasing popularity of the four wheel drive method of power application is seen in the entrance on the market recently of several new tractors of this type.

TRUCKS AT 19-MILE CLIP ON RUN OF 135 MILES.

Three Acme two-ton trucks, equipped with pneumatics, recently made a run of 135 miles from the plant of the Continental Motors Corporation, Muskegon, Mich., to the Acme factory at Cadillac, Mich., in seven hours actual running time, an average of better than 19 miles an hour. Each truck carried six crates of motors, the loads weighing about 5500 pounds. In spite of long hills of heavy sand each truck used but 24 gallons of gasoline and three quarts of oil for the round trip of 270 miles.

WHY SOME WESTERN BANKS SHY AT TRUCK FINANCING.

Banks in Colorado, Utah, Wyoming and other western points have been unable to finance truck dealers recently and it is declared that this condition is due to the heavy loans made farmers on crop prospects. It is reported that dealers have, in instances, met with obstacles in endeavoring to get out their own deposits. Many banks made loans to stock raisers when prices were higher than now and are in desperate straits.



The Complete Chassis of the Winther "Special Delivery" Truck, Equipped with Pneumatic Tires for Fast Service.

FOUR TRUCKS IN AETNA SERIES

MANUFACTURE of four sizes of truck chassis has been begun by the Aetna Motors Corporation of New York, a concern that has established executive offices at 617-21 West 57th street, New York City, with factory A at that location and factory B at 614-16 West 58th street. The chassis are rated at $1\frac{1}{2}$, $2\frac{1}{2}$, $3\frac{1}{2}$ and $5\frac{1}{2}$ tons load capacity.

Strong claims are made by the company for the quality of the chassis, which are constructed from units that are regarded as the best produced by some of the extremely successful specialists of the power vehicle industry, and one statement is that the factors of safety are unusually large, one of the principal objects being to obtain great endurance and exceptional service life.

The company further claims that practically every unit is over size when measured by other machines of similar rated capacities, and for this reason the cost of maintenance should be small, and the operating expense correspondingly low.

Builds to One Standard Design.

The company has standardized its design, all of its trucks being constructed to it and differing only in dimensions. Much attention has been given to constructional details and the assemblies are regarded as being highly perfected. The units include Wisconsin engines, equipped with Pierce governors and Zenith carburetors, Borg & Beck multiple disc dry plate clutches, Cotta transmission gearsets, Spicer shafts and universal joint, Sheldon worm and worm wheel rear axles and Ross steering gears. The frames and the fittings used in assembling the chassis are designed and made to the requirements of the engineers, and the frames are constructed in the company's shops.

The $1\frac{1}{2}$ -ton chassis has wheelbase of 144 inches, the $2\frac{1}{2}$ -ton chassis 150 inches, the $3\frac{1}{2}$ -ton chassis 160 inches and the $5\frac{1}{2}$ -ton chassis 168 inches. The engines are all standard Wisconsin types, four-cylinder, water cooled, with detachable heads, three-journal crankshafts, and lubricated by the well known Wisconsin full pressure system through manifolds and drilled crankshafts.

Four Sizes of Wisconsin Engines.

The engine of the $1\frac{1}{2}$ -ton chassis has cylinder bore of $3\frac{3}{4}$ inches and stroke of five inches, and is rated by the S. A. E. formula at 22.50 horsepower; the engine of the $2\frac{1}{2}$ -ton chassis is rated at 28.90 horsepower, the engine of the $3\frac{1}{2}$ -ton chassis at 32.40 horsepower, and the engine of the $5\frac{1}{2}$ -ton chassis at 40 horsepower. All of these will develop power considerably in excess of these ratings. The engines are cooled by circulations of water forced by centrifugal pumps through the cylinder jackets and through tubular radiators with cast top and bottom tanks that are designed by and built by the company. These radiators are suspended to effectually protect them against road shock and chassis distortion stresses and are protected by bar guards from damage from coming into collisions.

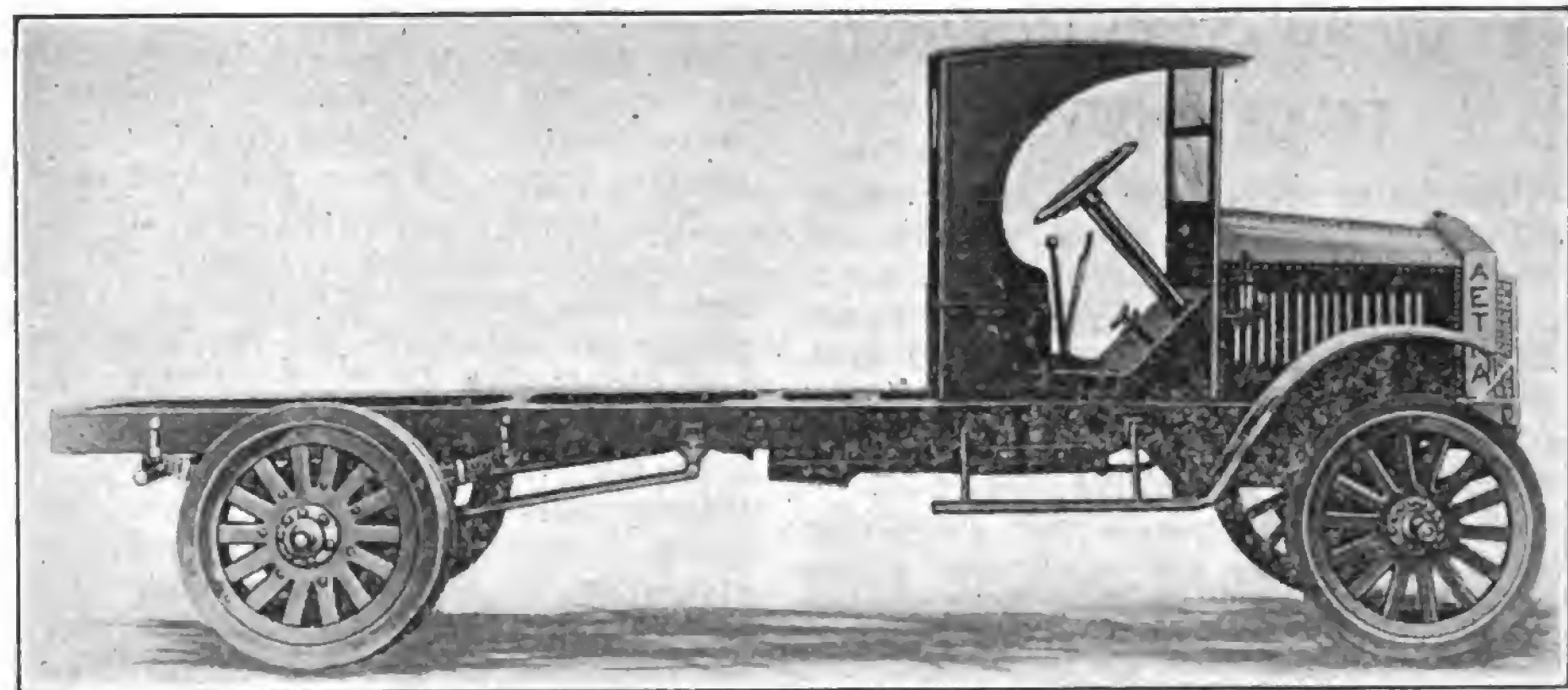
The clutches are practically self-compensating for wear and require but little

attention aside from lubricating the throw-out bearings. The transmission gearset gears are always meshed, so there is no possibility of stripping teeth or damage from carelessness or negligence, and these have four forward speed ratios and reverse. The gearsets are located amidships, and are suspended at three points. The driving shafts ahead and back of the gearset have universal joints at either end.

All Chassis Are Worm Driven.

The Sheldon worm and worm wheel axles are a semi-floating type with the worm shaft and differential gearset mounted in annular ball bearings and the entire driving assembly aside from the shafts removable as a unit with the cover plate of the bowled central section of the axle housing.

The frames are rolled steel channel section, that of the $1\frac{1}{2}$ -ton chassis being five inches wide and weighing nine pounds to the foot; the $2\frac{1}{2}$ -ton chassis six inches wide and weighing $10\frac{1}{2}$ pounds to the foot; the $3\frac{1}{2}$ -ton chassis seven inches wide and weighing 14



Aetna $2\frac{1}{2}$ -Ton Truck Chassis Complete with Cab, Built to a Standard Design from Units of Recognized Quality—All Are Worm Driven.

pounds to the foot, and the $5\frac{1}{2}$ -ton chassis eight inches wide and weighing $18\frac{3}{4}$ pounds to the foot. The frames are very carefully constructed and are strongly reinforced and gusseted.

Spring Suspension a Feature.

As the Hotchkiss drive is a feature of the design the springs are very carefully assembled and installed. The spring dimensions and number of leaves are unusual, those of the $1\frac{1}{2}$ -ton chassis having nine leaves forward and 13 rear, the $2\frac{1}{2}$ -ton chassis 12 and 14, the $3\frac{1}{2}$ -ton chassis 12 and 17 and the $5\frac{1}{2}$ -ton chassis 12 and 18. In the same order the front and rear springs are respectively 38 by $2\frac{1}{2}$ and 52 by three inches, 40 by $2\frac{1}{2}$ and 52 by three inches, 46 by three and 60 by $3\frac{1}{2}$ inches, and 46 by $3\frac{1}{2}$ and 60 by four inches.

The wheels are wood, artillery type, and these are shod with solid tires, these being in the order of chassis previously stated, 36 by $3\frac{1}{2}$ inches forward and 36 by five inches rear, 36 by four inches forward and 36 by four inches dual rear, 36 by five inches forward and 36 by five inches dual rear, and 36 by six inches

forward and 40 by six inches dual rear.

The control of the trucks is to standard practise, and the brakes are all internal expanding, within drums bolted to the rear wheels. The steering column is at the left side. The percentage of load on the rear axles is 50 for the two smallest and 55 for the two largest chassis when unfreighted, and 70 and 75 per cent. for the same machines when loaded.

TIPS FOR TRUCK DRIVERS.

The Transport Headlight, published by the Transport Truck Co., Mount Pleasant, Mich., presents the following suggestions for truck operators:

Balance your load. Keep the bulk of it toward front of body.

Start slowly; do not spin wheels. Remember this rapidly wears tires.

Don't shift gears until you have gained sufficient momentum—and take time to do it.

Do not ride the clutch pedal. This has a damaging effect on clutch throw-out bearing. Avoid slipping the clutch; shift

to lower gear when on hard pull.

Slow down to five miles an hour before turning corners.

Do not slam on the brakes, causing car to skid.

Use chains only when necessary. Equip your truck with chains that are easily put on and taken off.

Do not ruin tires by rubbing the curb.

Do not drive in ruts. Save roads and tires.

BIG JUNE TRUCK OUTPUT.

In June 19,943 trucks were produced in the Detroit territory against 19,532 in May. This is a splendid showing considering the financial stringency and the transportation situation. A cut in production had been anticipated.

45 WAR TRUCKS TO R. I.

The State of Rhode Island has received 45 motor trucks, valued at \$128,000, from the government for use in carrying out the state building program. These trucks are part of the excess war material.

SEEN FROM MANY VIEWPOINTS

FEDERAL TO PERSIA.

The Federal truck, which is in the government mail service in India and China, in the mines of Spain and South America, the industrial regions of England, France and Australia, does heavy freight hauling in South Africa and is doing its share of the world's transportation in every country and industry, has at last invaded the ancient kingdom of Persia.

A 1½-ton Federal with a combination body to carry mail, baggage and eight or 10 passengers is now on the Atlantic, the first stage of its journey to Teheran, the Persian capital. It will go through Europe to Bagdad and from there be driven across the desert to its destination. Pneumatic tires and soft cushion upholstery will add to the comfort of passengers. The Federal was secured by the Parsis Yaganeyi Co. for this work after investigations which pointed to superior stand-up ability in a country which is without service stations.

INSURANCE AGAINST ROBBERY BY HIGHWAYMEN PROMISED TRUCK SHIPPERS

Insurance policies giving motor transportation protection equal to that afforded railway and express shipments is promised by an old line company. In addition to insuring against fire and collision these policies will offer protection against theft and pilfering, with reasonable restrictions and at reasonable prices.

The new plan assures full protection on truck cargoes for operators whose business methods are such as to entitle them to a place on a certified list. The plan also provides for export assistance in installing cost systems in the offices of operators and for frequent and thorough inspection of the trucks.

The bill of lading carries a blanket insurance clause covering fire, collision, upset, theft and pilfering. The usual personal and legal liability clause also will be inserted in the new plan according to E. M. Gunsaulus of the Firestone Ship-by-Truck Bureau.

TRAVELS 250,000 MILES.

H. G. Pendell, Denby distributor at Los Angeles, Cal., recently has had a photograph taken of No. 167, model B, originally sold to Thomas O'Brien of Lebec, Cal., and then resold twice after continuous service in freight hauling work. It has traveled over 250,000 miles and the block has never been rebored. Repair bills have been so light that none of the owner could remember a single one.

TRAFFIC CO. MAKES GEARS.

The Traffic Motor Truck Corporation, St. Louis, Mo., will manufacture gears for steering service, axles, etc., in a part of its new 150x150 one-story building being erected near its present factory.

FEDERAL RESERVE GOVERN- ORS FAVOR DISCOUNTING OF GOOD TRUCK PAPER

David Thomas, general manager of the Motor Truck Manufacturers' association, with headquarters in Chicago, is rapidly running into the ground misleading statements that bankers have been restrained from discounting motor truck paper by Federal Reserve Boards. Mr. Thomas has spent considerable time in Washington with Federal Reserve officials in behalf of the leading motor truck manufacturers. In other ways he has been tracing the causes of the credit problem as it has affected makers and dealers in trucks.

Mr. Thomas says: "The position which the Federal Reserve Board has taken is most satisfactory to motor truck industry. It is not discriminating for or against any industry by name. Its position is so clearly stated that if the motor truck were fully appreciated by the public and the bankers, there would be no motor truck credit difficulties."

He also quotes from a letter written by Governor Harding of the Federal Reserve Board, in Washington, D. C., to Senator Owen. In part, the letter reads:

"The board is insisting that all banks use a discriminating judgment in making loans, giving preference to those which are necessary for the production and distribution of the basic necessities of life, such as clothing, food and fuel."

In the opinion of Mr. Thomas, the transportation advantages of the motor truck alone entitle it to favorable consideration by bankers, according to the above letter. He also quotes from a statement by the Federal Reserve Board in May showing the latitude allowed bankers in extending such credits.

The Board's Statement.

The statement reads:

"It is the view of the board that while Federal Reserve banks may properly undertake in their transactions with member banks to discriminate between essential and non-essential loans, nevertheless that discrimination might much better be made at the source by the member banks themselves. The individual banker comes in direct contact with his customers because of his familiarity, not only with the customer's business, but with the general business condition and needs in his immediate locality. In making loans he is bound by no general rule of law as to the character of the purpose for which the loan is being asked. He is entirely free to exercise discretion and make one loan and decline another as his judgment may dictate."

Atlanta Governor's Views.

In order to further corroborate the above statement, Mr. Thomas submits a letter which he received from M. B. Wellborn, governor of the Federal Reserve bank at Atlanta, Ga. The letter reveals a wide and constructive knowledge of the country's needs and a thorough com-

prehension of the value of the motor truck as a means of transportation and production. It reads in part as follows:

"I think that at this time when transportation facilities are so badly crippled we are doing a useful public service in continuing to grant credits for financing trucks and tractors.

"I feel that anything that can be done to encourage production and the sale of motor trucks will be of real value to the transportation problem; and in view of the shortage of farm labor and the necessity for increased production of food-stuffs, I think the entire country will benefit from the manufacture and sale of tractors."

In the last analysis, according to Mr. Thomas, "when banks refuse motor truck paper on the ground that it is prohibited by rulings of the Federal Reserve Board they are merely 'passing the buck.' It is clearly up to the local banker to accept or reject motor truck paper."

BETHLEHEM MOTORS PRO- MOTING CAMPAIGN TO DE- VELOP OMNIBUS SERVICE

The Bethlehem Motors Corporation, Allentown, Pa., is devoting a part of its recently enlarged facilities to the building of bus bodies and interests allied with that company are preparing to further the use of motor buses throughout the country on an extensive scale. Plans are being made for the formation of a working organization which may operate as a Bethlehem subsidiary or as an independent corporation. A factory to be used entirely in the building of buses is one of its aims.

The matter will be gone at in a practical, business way. Experts will study the various fields and will determine just where buses can be made to pay. Routes will be mapped out. Prospective buyers will be shown the exact cost. A chassis with several special features is being designed for the purpose. Vehicles will be sold either singly or in fleets.

TRUCKS IN FRUIT GROVES.

Motor power has at last invaded a field which because of the soft ground was thought to be the exclusive territory of the horse, according to G. A. Kissel, president of the Kissel Motor Car Co. This is the fruit growing section of the southwest. On one 210-acre citrus ranch but two horses remain. A truck, special trailer and several tractors do the work.

GOODYEAR TIRE SALES.

The Goodyear Tire & Rubber Co., Akron, O., reports that its sales for the first six months of 1920 show an increase of 60 per cent. over sales for the same period in 1919. The gross business for last year was \$169,000,000, compared with \$10,000,000 only 10 years back. Truck business shows increase of 577 per cent.

PNEUMATIC TIRES ON TRAILERS.

(By Mr. Max Herrmann.)*

THE trailer follows the truck, both literally on the road and in the actual development of these two related hauling units. Naturally the trend towards the pneumatic tire applies to the trailer as well as to the truck.

We have had sufficient actual experience, hauling under every conceivable condition, now to know that pneumatic tires mean a saving in depreciation on both truck and trailer—a saving in repairs, particularly on the truck; a saving in fuel and a saving of engine troubles. High speed is made possible—an important consideration for companies engaged in intercity transportation. We have acknowledged the fact that any vehicle will have to stand considerably less punishment when equipped with pneumatic tires by adding one-half to one-ton additional capacity to the rated standard capacity of solid tire equipped trailers.

More trucks each day are now being equipped with pneumatic tires, in conse-

quence of which fact it becomes necessary to dispense with the solid pressed on tire as trailer equipment as fast as possible. It is fallacy to try to make a solid tire equipped trailer operate economically and successfully behind a pneumatic tire equipped truck, as such a method will mean either the retarding of the truck to the speed limited by the solid tire on the trailer, or to endanger the load on the trailer if the speed compatible with pneumatic tire on the truck is maintained.

Giving due consideration to this new and most recent development in the field of trailer operation, Warner trailers are now largely pneumatic equipped, as we find that this equipment insures better traction, especially over soft roads, and removes the tendency to skid on wet pavements, and on hard, country roads covered with a slimy surface after a rain.

We have had occasion to observe that solid tires are usually allowed to run down to one-half inch or less in thickness before they are replaced, which

means that the last few hundred, or even 1000 miles, will be run on a tire which, as to resiliency is about as bad as a steel tire. The pneumatic tire, on the other hand must be replaced when it is partially worn out, but will give full resiliency as long as there is enough tire left to hold the air.

From these few points it can clearly be judged that the pneumatic tire is desirable as equipment, both on truck and trailer, because of the extra speed, better traction and saving in depreciation.

The trailer as a hauling unit has, within the last 12 or 14 months, been getting the recognition it deserves. Trucking costs demand the increased capacity which the well-built trailer provides, and the dealer who sells a truck now, if he is an up-to-date dealer, will sell his customer proper transportation, by selling him with the truck, also a trailer.

*General Manager, Warner Manufacturing Co., Beloit, Wis.

TRUCK HAULS 32-TON LOAD.

The California Sea Products Co., a corporation engaged in deep sea whaling off the coast of California, was recently called upon to move a drying kiln, 50 feet long and eight feet in diameter, and weighing 32 tons, a distance of a mile and a half. Chief Engineer Goodwin of the company had no hesitation in entrusting this task to the company's five-ton Denby truck. Care had to be taken not to injure the cylinder or those engaged in handling it.

The apparatus was rolled off the railroad cars to the ground and a 12 by 12 timber was shored up from bottom to top in its center, then the truck was backed under the rear end of the cylinder. Heavy rollers, about six to eight inches in diameter, were used, working on planks placed on the roadway.

When all was ready the truck driver let in his clutch at low speed and the cylinder started moving the planks and the rollers were shifted ahead as fast as required. It is estimated that there were nearly 10 tons of the total weight of the cylinder on the back of the truck, the balance of the 22 tons being on the rollers and planks.

What made the job more difficult was the soft condition of the road and deep wheel ruts, which only the high road clearance of the Denby allowed of clearing and several bad, sharp turns which required much difficult manouvering to negotiate.

COLUMBIA AXLE EXPANDS.

The Columbia Axle Co. has bought the land and property of the Properties Co. along the New York Central railroad in Cleveland. The company bought the common stock of the Properties Co. in order to bring about the absorption. The deal involved about \$1,000,000.

TRUCK ON JOB SEVEN YEARS; REPAIR EXPENSE BUT \$20.

A Republic truck in the service of the Cadillac Varnish Co., Detroit, has established an all-around record for efficiency which will be hard to duplicate. This truck has been on the job for seven years and is still on duty. It has traveled over 400,000 miles, the total repair expense has been less than \$20 and it has the same set of tires today with which it was originally shod. It is one of the first chain driven trucks built by the Republic Motor Truck Co.

President A. S. Youngs of the Cadillac Varnish Co. has written the Republic Co. a letter concerning this truck, part of which follows:

"We have operated the truck for seven years and during that time have spent less than \$20 on repairs. We have

worked it pretty hard during all that time and yet it never required a complete overhauling in that time, nor has it been in any repair shop for serious work. All the repairs which were ever necessary were of a minor nature and we did the work ourselves.

"Our Republic truck has operated constantly in summer and winter and most of the time has carried a 50% overload.

"We cannot speak too highly of Republic construction, the dependable service which our truck has rendered, and the all around satisfaction which we have experienced with it."

MACCAR ADDITIONS.

Maccar Truck Co., Scranton, Pa., is putting up a one-story building, 95x200, to cost about \$75,000, and a smaller one-story structure at a cost of about \$10,000.



Republic Truck Used by Cadillac Varnish Co., Detroit, for Seven Years with an Aggregate Repair Expense of \$20.

NEW PHASES OF HIGHWAY HAULAGE

GENERAL FREIGHT RATES TO INCREASE 31 PER CENT.

ON AUGUST 25

New railroad freight rates are due to go into effect Aug. 26. New tariffs granted by the Interstate Commerce Commission in its order July 30 provide an average increase of almost 31 per cent. in freights, estimated by the carriers at \$1,285,000,000; an increase of 20 per cent. in passenger fares, estimated at \$333,800,000, and 50 per cent. in Pullman fares, estimated at \$43,600,000. Proportionate increases on milk transportation charges and excess baggage regulations are expected to provide \$4,500,000 and \$1,400,000 respectively.

The freight rate increases are apportioned to various sections of the country as follows: Eastern territory, 40 per cent.; western territory, 35 per cent.; southern territory, 25 per cent. and Pacific territory 25 per cent.

Previous to the Federal Labor Board's decision granting a wage increase of \$600,000,000 to the rail workers, it was estimated that the roads would require a sufficient increase in rates to raise their income \$1,017,000,000 a year, or an average increase of about 27 per cent. over existing rates.

RURAL TRUCK EXPRESS EXHIBIT AT SYRACUSE FAIR.

Eleven directors of state fairs have invited the motor truck committee of the National Automobile Chamber of Commerce to stage exhibits of rural motor truck express lines, but the only one accepted has been that of the New York state fair at Syracuse, Sept. 6-11. The others were declined because field men are not available to put on the displays. This wholesale demand for these exhibits is in marked contrast to last year when all the fairs shied at this movement.

Other states besides New York which sought them this year were Pennsylvania, Massachusetts, Vermont, Indiana, Missouri, Wisconsin, Alabama, Mississippi, Louisiana and New Jersey.

RURAL EXPRESS AT SEATTLE.

Regular truck delivery service has been inaugurated from Seattle, Wash., to Bellingham, Aberdeen and other points within a radius of 125 miles of Seattle. One company is erecting a motor freight depot at a cost of \$150,000. The plans call for two additional stories at an early date.

CONGESTION CUT IN N. Y.

The Citizens Trucking Co. of New York city issued a summary of operations on July 24 showing that it had moved 12,870,050 pounds of freight in its fight to relieve congestion up to that time.

TRUCKS HAUL BY WHOLESALE TO INDIANAPOLIS STOCK YARDS.

The Belt Railroad & Stock Yards Co., Indianapolis, Ind., operating the largest stock yards in the United States east of Chicago, recently made public figures showing that in 1919 a total of 880,597 head of hogs, cattle, calves and sheep, one-fourth of its receipts, came by truck. That even this astounding total is being increased is disclosed by figures for January of this year, which show that 5469 trucks were unloaded at the yards of their burden, about 92,500 head of hogs and cattle.

The receipts by truck in 1919 were a quarter of a million more head than in 1918 and the latter total was nearly 200,000 head more than in 1917.

Most of these trucks come from within a radius of less than 100 miles and much of this trucking is done at night. In one day recently more than 500 trucks unloaded at the stock yards, the hogs carried being worth over \$200,000. There have been a number of instances when more than 1000 trucks unloaded within a period of 12 hours.

RAILROAD MEN BOOST TRUCKS.

A symposium of the views of railroad presidents on the value of motor trucks to transportation just compiled by the Motor Truck Committee of the National Automobile Chamber of Commerce, shows the following executives as strong indorsers of the truck for short hauls and a necessary adjunct to the railroads: J. E. Gorman, president the Chicago, Rock Island & Pacific Railway Co.; Norman Call, vice president, Richmond, Fredericksburg & Potomac Railroad Co.; H. E. Byram, president Chicago, Milwaukee & St. Paul; C. A. Phelan, general manager, Missouri & North Arkansas; Daniel Willard, president, Baltimore & Ohio; W. H. Finley, president, Chicago & Northwestern; C. L. Bardo, general manager, New York, New Haven & Hartford; W. G. Besler, president, Central Railroad Co. of New Jersey.

PLAN LOS ANGELES-SAN FRANCISCO TRUCK FREIGHT LINE.

An application for a motor truck freight line between San Francisco and Los Angeles, the first between those points, has been filed with the state railroad commission by J. B. and P. K. Nichols of San Francisco and W. A. and L. M. Deland of Richmond. The application urges that inadequate railroad service is at present holding up shipping between the points named.

TWIN CITY TRUCKERS UNITE.

The Twin City Motor Truck Trade association has been formed at Minneapolis, with 77 truck dealers present at the organization meeting. The officers are: President, Harry I. DeFoe; secretary, W. E. Smith; treasurer, J. A. Donnelly.

DAILY-HAULAGE SERVICE ON 100-MILE TEXAS ROUTE WITH 5-TON TRUCK

A fleet of five Republic trucks, operated by Forsyth's Transfer line, is making truckportation history down in Texas, where this concern is carrying capacity loads of merchandise and passengers. About three years ago the line was started with one small truck, primarily for the purpose of hauling milk from the upper Rio Grande valley into El Paso, returning with ice and other commodities to LaMesa, N. M. The round trip between these two points is approximately 100 miles, and each of the Republic trucks in this service covers the route daily, hauling merchandise freight as well as passengers between both cities.

Trips are covered by schedule with regular stops at way points to deliver and receive freight, as well as to pick up and discharge passengers. Freight and passenger rates are based upon the distance traveled and the line is reported highly successful. The transfer line covers towns along the Santa Fe railroad and has proven a valuable adjunct of transportation in that section by touching scores of small towns situated miles inland from the Santa Fe.

BIG RURAL EXPRESS LINES.

Highway power transportation is growing amazingly. Among big organizations in this field is the Patriot Motor Express Co. of Wichita and Kansas City, Kan., which is capitalized at \$1,000,000. The company operates in Kansas, Nebraska and Missouri, and is reported to be keeping 250 trucks busy. Most of its trucks are on Goodyear pneumatics. The American Motor Freight Co., Sioux Falls, S. D., is capitalized at \$500,000. It covers 80 towns in Minnesota, Iowa and South Dakota.

ALBANY TRUCK TERMINAL.

The Albany, N. Y., Chamber of Commerce is to establish a general terminus for the 70 or 80 freight and passenger truck lines operating out of that city. Trucks and buses now leave at irregular periods from irregular points. Under the new plan a terminal company will arrange shipments and the buses will run on regular schedule.

200 STOPS ON EXPRESS LINE.

Rural Truck Motor Terminals, Inc., with terminals in both Minneapolis and St. Paul, stops at over 200 points daily and insures all cargoes.

6621 TRUCKS IN MAINE.

In Maine 6621 trucks had been registered up to the first of the month. Automobile registration fees amounted to \$739,015, against \$613,009.25 in 1919.

SHOWS, DEMONSTRATIONS AND TOURS

TRUCK EXHIBITION SPACE AT PREMIUM FOR INDIANA ANNUAL STATE FAIR

Motor trucks will be one of the features of the automobile show which the Indianapolis Automobile Trade association will hold at the Indiana State Fair the week of Sept. 6. Although the show is held in one of the largest and best appointed buildings in the country, the floor space has all been taken by auto and truck agencies and by makers of motor accessories. An effort is now under way to admit more makes of trucks and motor cars by reducing somewhat the floor space already allotted to exhibitors.

The automobile interests at Indianapolis began to hold motor shows at the Indiana fair about 10 years ago, for several years housing the displays in a huge circus tent. But last year the fair management erected a building especially designed for auto shows, the structure being one story, with saw-tooth roof, and built of steel, concrete and brick. The structure is of imposing design and has 80,000 square feet of floor space.

When completed for the fair of 1919 the building was thought to be large enough to meet the requirements for many years, but it proved too small for the first show and will be filled to its capacity at the coming exposition. The building is also used for the early spring shows of the Indianapolis association. When not in use for show purposes the big building is used by Indianapolis dealers as a storage place for surplus cars.

The Indianapolis association was the first in the United States to put on a motor show at a state fair, thinking it a favorable opportunity to display cars to people from farms and smaller towns. The show has been highly successful from the beginning, many thousand suburban and farm people attending while they also see other features of the fair. At the show last September about 200,000 people saw the motor displays, crowding the building every day and evening.

John Ormand, who has managed the fair's auto show for years, has charge of it again this year.

GOODYEAR COAST-TO-COAST RECORD TRUCK ON MICHIGAN TOUR.

The Goodyear Packard pneumatic-tired truck which recently turned in a new coast-to-coast record, made the International Good Roads Tour of the Michigan Pikes association and attracted much attention.

ROCKY MOUNTAINS TOUR.

Dealers in the truck division of the Rocky Mountain Automobile Trades association are planning a 30-day ship-by-truck tour out of Denver to cover 13 counties in eastern and northern Colorado.

HARDING FOR HIGHWAY UPKEEP.

In his speech of acceptance Senator Warren G. Harding, Republican nominee for President, said:

"The one compensation amid attending anxieties is our new and needed realization of the vital part transportation plays in the complexities of modern life. We are not to think of rails alone, but highways from farm to market, from railway to farm, arteries of life-blood to present-day life, the quickened ways to communication and exchange, the answer of our people to the motor age. We believe in generous Federal cooperation in construction, linked with assurances of maintenance that will put an end to criminal waste of public funds on the one hand give a guaranty of upkept highways on the other."

FOREIGN TRUCK CENSUS.

The Bureau of Foreign and Domestic Commerce has just compiled a world census of trucks which shows that the leading countries on the other side have the following number in use: United Kingdom, 85,000; New Zealand, 8000; Australia, 2024; Sweden, 2000; Belgium, 1937; Italy, 1064; British West Africa, 968; Denmark, 939; Switzerland, 782; Norway, 661; Japan, 200. No figures are given for France or Germany. No complete figures are reported for Canada, but the Province of Ontario had 7529 in 1918 and the Province of Quebec had 2565 in 1919. Brazil has 458. Spain had 700 or more in 1919.

UTILITY TRIALS TO FEATURE WISCONSIN STATE FAIR TRUCK EXHIBITION

The Milwaukee Automotive Dealers' association is to carry out some big league ideas in connection with the Wisconsin state fair, Aug. 30-Sept. 4. A five-acre tract adjacent to the passenger car show building will be turned into "Trucktown." It will be laid out as an ideal village and conducted along municipal lines, with its own ways, police, fire department, etc. It will be equipped with trucks, general haulage tractors, trailers and other devices used to transport farm products to the market. A motor bus line will operate from the main gate to the village.

A demonstration ring will be installed and here will be given loading and unloading demonstrations, exhibitions of hoists and ladders, removing empty bodies and replacing loaded bodies on chassis, comparison between horse drawn and motor vehicles in hauling and many other features that will serve to drive home to the farmer the practical and economic uses that can be made of the truck and its auxiliaries. Motion pictures will also be employed to advance the cause.

STANDARD TRUCK CHASSIS A GOLD MEDAL WINNER IN SPANISH ROAD TEST

That motor truck engineers of America outskill their European competitors was proven in recent tests sponsored by the Automobile club of Barcelona, Spain, when a Standard stock chassis taken from the floor of a Barcelona dealer took the gold medal in its class against 27 other trucks, including the leading makes of England, France, Spain, Switzerland, Germany, Italy and America.

The trials were conducted between Barcelona and Madrid and exhaustive tests under conditions rarely encountered by the average truck in commercial usage were made from a standpoint of economy, power, durability and haulage ability. All vehicles were tried with various fuels over the same measured course. The thoroughness with which these tests were carried out is evidenced by the fact that they continued for six days.

Although England sponsored the worm-drive rear axle, it was the progressive American manufacturer who developed it and brought it to its present state of efficiency.

After the tests were completed and awards made, the gold medal winners were reviewed by the King and Queen of Spain from the balcony of the Royal Palace at Madrid. The successful contestants received an ovation as they passed the royal party.

TOLEDO FARM TOUR.

Fifteen makes of trucks took part in a \$100,000 caravan of motor trucks and other vehicles used in farming which left Toledo on a five-day tour the latter part of July. Three towns were visited each day and demonstrations given. Cards were distributed along the way and prospective buyers were asked to designate the equipment in which they were most interested. Later these trips will be followed up. The Great Lakes Naval Training band furnished music along the route and moving pictures and addresses were also a feature of the trip. The event was in charge of Secretary Ray Skinner of the Toledo Automobile Trades association.

400 TRUCK LINES IN ITALY.

Italy has probably a better developed system of feeding railroads by freight with motor trucks than any other country. Trucks run on regular schedule over routes totaling 8070 miles, while the total length of normal track railroad lines is 8700 miles. There are 400 of these truck lines in operation and they are doing a great service in opening up country inaccessible to the railroads. Both merchandise and passengers are carried.

MOVEMENTS AND ACTIVITIES OF

GRAHAM NAMED PIERCE-ARROW VICE PRESIDENT.

George M. Graham, general sales manager of the Pierce-Arrow Motor Car Co., has been promoted to vice president, suc-



George M. Graham, General Sales Manager, Elected Vice President of Pierce-Arrow Motor Car Co.

ceeding W. J. Foss, resigned. Mr. Graham was brought into the company by Mr. Foss over four years ago from Philadelphia, where he was engaged in newspaper work. He started as assistant commercial manager and has rapidly worked his way along, finding time meanwhile to give of his time and ability for the general good of the industry. Mr. Foss, who joined the Pierce Co. in 1915 as commercial manager, came from the Foss-Hughes Co., Philadelphia Pierce-Arrow distributor. He will take a long vacation before engaging in any activity.

CLINGAN BOCK MANAGER.

The Bock Bearing Co., Toledo, O., a division of the Standard Parts Co., has appointed R. E. Clingan general manager. He was formerly sales manager and succeeds G. H. Kleinert, resigned. L. W. Close goes to the post of chief engineer, succeeding W. L. Scribner, resigned.

DE WEESE AXLE ENGINEER.

The Columbus Axle Co., Cleveland, has engaged Bernard De Weese, who is well known in the industry, as sales engineer. He was formerly with Kilbourne & Jenkins, dump body manufacturers, Columbus.

CAMPBELL IN NEW POST.

W. M. Campbell, who was with the Wright-Chapman Motor Co., Cedar Rapids, Ia., has become sales manager of the truck department of the Lucke Sales & Engineering Co., Minneapolis.

NEW TRANSPORT EXECUTIVES.

The Transport Truck Co., Mount Pleasant, Mich., recently strengthened its sales force by signing W. A. Neilson to take charge of southern territory, with headquarters at Murfreesboro, and Glenn Rockwell to care for Transport interests in the eastern states.

Mr. Neilson was recently south district manager for Republic Motor Truck Co., and was formerly with American Seeding Machine Co., and the Walter A. Wood Co. Mr. Rockwell has been eastern district manager for both the Republic and Acme companies.

GOODYEAR GETS FOLJAMBE.

E. E. Foljambe, for 13 years directing editor of the Chilton publications, has resigned and will assume an executive position in the new Los Angeles factory of the Goodyear Tire & Rubber Co. The change was made in the hope that the California climate may be beneficial to Mr. Foljambe's health. Among his activities in behalf of the automotive industries has been a term as first vice president of the Society of Automotive Engineers.

KALAMAZOO FIELD MEN.

The Kalamazoo Motors Corporation, manufacturing Kalamazoo trucks in Kalamazoo, Mich., has strengthened its field force by the following appointments: C. B. Summerland, covering southwestern states; B. H. Dunkley, Indiana, Illinois, Wisconsin and Minnesota; Paul L. Klingler, southeastern states; Irving A. Milham, Kentucky and Tennessee, and Ralph W. Chapman, Pennsylvania and New York states.

CRAMER TO MINNEAPOLIS.

The Goodyear Tire & Rubber Co., has appointed C. A. Cramer, manager of tire sales for the Minneapolis territory, including Minneapolis, St. Paul, Duluth, Sioux City and Minot. He was formerly branch manager at Omaha, Neb., and has spent the last nine of his 20 years in the automobile and tire business with the Goodyear people.

BOHAN WALKER AXLE HEAD.

The Edward Valve & Manufacturing Co., Chicago, manufacturer of Walker axles, has appointed Lloyd J. Bohan general sales manager of its axle department. He was formerly western sales representative for the Torbensen Axle Co. and had also been with the Gurney Ball Bearing Co.

SWARTZ A TIMKEN MAN.

The Timken Detroit Axle Co., Detroit, has engaged G. E. Swartz as manufacturing manager. He was formerly mechanical superintendent for the Torbensen Axle Co., Cleveland.

CREBBINS MANAGER OF STOUGHTON WAGON CO., TRUCK DIVISION.

The Stoughton Wagon Co., Stoughton, Wis., has acquired the services of Fred Crebbin, Jr., one of the well known ex-



Fred Crebbin, Jr., General Manager Truck Division, Stoughton Wagon Co.

ecutives in the automotive industry, as general manager of its truck division. He will be in complete control of that department.

Stoughton's new truck division chief was a pioneer in the industry. He began his career with the Packard Motor Car Co. in Detroit, for whom he served several years as head of various departments. In 1908 he left the Packard company and took a place with the Thomas Motor Car Co. of New York. After three years he severed his connection with that concern to become general sales manager of the S-G-V Co. He was with the Hurlburt Motor Truck Co. in New York city for seven years before going to Chicago in the spring of 1919 as factory manager of the Master Truck Co.

TRANSPORT FACTORY MAN.

The Transport Truck Co., Mount Pleasant, Mich., has appointed Ludwig Arnson as special factory representative, covering the entire United States. He has been American representative for Longmère Freres of Paris, the original manufacturers of carburetors, and has also had lengthy service with the Duplex Engine Governor Co., and the U. S. Motors Co. He took a degree as an electrical engineer at Columbia university.

BARR IN NEW POST.

Burt R. Barr has resigned as advertising and assistant sales manager of the Stewart Motor Corporation, Buffalo, and has accepted a position as sales and advertising manager of the Houdaille Co. of that city, which manufactures shock absorbers.

OF PLANT AND SALES PERSONNEL

NEW APEX SALES DRIVE.



Willard S. Binney, Advertising Manager,
Traffic Motor Co.

A. L. Martin, general sales manager of the Hamilton Motors Co., Grand Haven, Mich., is inaugurating an intensive sales policy for Apex trucks and to that end is locating district sales managers in every section of the country. His latest appointments were D. C. McIntire for the Pacific coast territory and E. W. Kalamán for the Kansas City district. Both are widely known in the industry.

Mr. McIntire was recently in the transportation engineering department of the Four Wheel Drive Auto Co., Clintonville, Wis. His headquarters will be in San Francisco. Mr. Kalamán will have his office in Kansas City and will have charge of sales in Kansas, Oklahoma, Arkansas, Iowa and Nebraska. He was for four years with the Harley-Davidson Co. and has been sales manager and special representative with several automobile distributing concerns.



E. O. Bodkin, Transportation Engineer,
Sewell Cushion Wheel Co.

FWD OFFICIALS GO ABROAD.

President W. A. Olen and Directors D. J. Rorher and C. F. Folkman of the Four Wheel Drive Auto Co., Clintonville, Wis., sailed Aug. 14 for England in the interests of the company. They will join Senator Anton Kuekuk, who is also a director, on the other side. The FWD officials will study the truck situation abroad with the idea of broadening its facilities for handling its rapidly expanding export trade.

CRITCHLEY OPENS OFFICE.

J. S. Critchley, widely known in the automotive industry here through representing the British government on this side during the war in the purchase of motor trucks, has opened offices as consulting engineer at 3 George street, Hanover square, London. He was formerly president of the British Institute of Automobile Engineers.

HARDIG WITH HYATT.

Joseph L. Hardig, formerly assistant advertising manager of the motor equipment division of the General Motors Corporation, and previously advertising manager of the Remy Electric Co., has been appointed advertising manager of the Motor Bearings Division of the Hyatt Roller Bearing Co., Detroit.

MAXWELL CHANGES.

The Maxwell Motor Co., Inc., has put Carl E. Stebbins, assistant sales manager, in charge of its Chicago branch, succeeding A. J. Banta, resigned. Langdon Smith, recently eastern district manager for the Maxwell people, has gone into the retail field, taking the Maxwell line at Baltimore.

WRIGHT REPUBLIC ENGINEER.

The Republic Motor Truck Co., Inc., Alma, Mich., has engaged B. F. Wright as chief engineer to succeed Maj. William Britton, who goes with the new company organized by F. W. Ruggles, former Republic president, which will be located in Saginaw. Work on the truck to be built by the new Ruggles company has been in progress about a year. The new Republic engineer was formerly chief engineer for the Federal Motor Truck Co. and is a leader in his profession.

OSHKOSH ADVANCES GREEN.

The Oshkosh Motor Truck Manufacturing Co. has appointed Harry G. Green district sales manager for the factory in charge of the northwest territory, with headquarters at its Minneapolis branch. He had been vice president and general manager of the Lewis & Greene Motor Co., Wisconsin distributor of Oshkosh trucks. He is succeeded in that capacity by Scott Seddon of St. Louis.

COMMERCE SERVICE CHIEF.

The Commerce Motor Car Co., Detroit, has appointed M. L. Pulford as service engineer in charge of the company's service department. He has been with the organization seven years, chiefly in the engineering department. He is credited with both executive and engineering ability and should maintain this important department on a high plane.

HAWLEY IN NEW POST.

Raymond Hawley, formerly with the Keystone Motor Truck Corporation, Philadelphia, and with other automotive concerns in both the domestic and foreign fields, has been elected vice president of the Technical Advertising Service, Inc.

BODKIN JOINES SEWELL WHEEL.

The sales force of the Sewell Cushion Wheel Co., Detroit, manufacturer of Sewell wheels for trucks, has been augmented by E. O. Bodkin, who was for four years with the Packard Motor Car Co., who is serving with it as a transportation engineer.

GMC MAN FOR GOVERNOR.

C. S. Mott, a director of the General Motors Corporation, is one of the eight candidates for the Republican nomination as governor of Michigan. He has been three times mayor of Flint. He is pledged to run the state along business and economic lines.

FIRESTONE SAILING HOME.

President H. S. Firestone of the Firestone Tire & Rubber Co., Akron, O., sailed on the Olympic for New York, Wednesday, Aug. 18, after spending several weeks in England and on the continent investigating general business and export conditions.

HENNINGER HEADS LORAIN.

Vice President M. J. Henninger has been appointed president and general manager of the Lorain Motor Truck Co., Lorain, O., which was organized last November. He succeeds T. W. Morgan, resigned.

BARNETT WITH PARKER.

The Parker Motor Co., Milwaukee, Wis., has engaged E. P. Barnett as a sales representative in and about Milwaukee. He has been with the Sterling Motor Truck Co. and the Titan Motor Truck Co.

CHANGES AND NEW ENGAGEMENTS

HALLIDAY, MACK N. E. MANAGER.

Norman H. Halliday, manager of the Mack Motor Truck Co., Cambridge, Mass., has been appointed district manager for New England territory. Mr. Halliday took the Mack truck for the Boston section when the vehicle was little known and, backed by the merit of the product, built up an amazing business. Wilbur M. Maynard, formerly of the Dodge Co., who has been Mr. Halliday's assistant for several months, will manage the Cambridge office.

PATTERSON TO SELL FULTONS.

E. W. Patterson, service manager for the Stenerson Motors Corporation, Philadelphia distributor of Westcott cars, will assume the agency personally in that city for the Fulton truck. He was formerly service manager for the Fulton Truck Co., Philadelphia.

W. B. HURLBURT RESIGNS.

William B. Hurlburt, founder of the Hurlburt Motor Truck Co., has resigned and has also severed his connection with the Hurlburt Sales Co. and Hurlburt Motors, Inc. He is already active along new lines the exact nature of which have not been disclosed.

HENRY STUDEBAKER ENGINEER.

Guy P. Henry, who has occupied executive positions in the manufacturing and engineering departments of the Studebaker Corporation, South Bend, Ind., for the past nine years, has been appointed chief engineer.

JOHNSON HANDLING NAPOLEONS.

John S. Johnson is now selling Napoleon trucks to dealers in Minnesota and North and South Dakota, representing Whitcomb Auto Co., Minneapolis distributor. He does his traveling on a three-quarter-ton Napoleon Speedwagon.

SEWELL GETS LYONS.

The Sewell Cushion Wheel Co., Detroit, has appointed James V. Lyons manager of its national account division. He was for six years central representative of the American-La France Fire Apparatus Co., Elmira, N. Y.

DISTRIBUTES NOBLE TRUCKS.

Whittaker-Kimes Sales Co., Indianapolis, Ind., has just been organized and has taken quarters at 320 Capitol avenue, where it will distribute the Noble truck and Miami trailer.

McJAMES SELLS SAMSONS.

C. E. McJames has been appointed manager of the Samson truck and tractor department by "Lucky" McFall, Manteca, Cal.

MORGAN CHIEF INSPECTOR FOR TRANSPORT TRUCK CO.

The Transport Truck Co., Mount Pleasant, Mich., has appointed W. C. Morgan as chief inspector and counts on him to keep its inspection department up to its present high standard. Mr. Morgan has been prominent in the automotive industry for a number of years and is an expert in his field. He served two years in the world war and has held important posts with the General Motors Corp., the Acme Truck Co. and the Simplex Wheel Co.

PERKINS SALES AND ADVERTISING MAN FOR "UNCLE SAM."

The U. S. Tractor & Machinery Co., Menasha, Wis., manufacturer of the Uncle Sam tractor, has engaged E. J. Perkins as sales and advertising manager. Mr. Perkins was formerly editor and manager of Gas Power, was a pioneer in the gas engine industry and one of the founders of the National Gas Engine association.

W. A. MURFEY SALES MANAGER FOR RELIABLE.

The Reliable Tractor & Engine Co., Portsmouth, O., has secured W. A. Murfey, for several years sales manager of the King Trailer Co., Ann Arbor, Mich., for the post of tractor sales manager.

OKAY FOREIGN REPRESENTATIVE.

The Oklahoma Auto Manufacturing Co., Muskogee, Okla., has named John B. Page as foreign sales manager for its Okay trucks. He formerly held a similar post with the Traffic company.

BIGGER JOB FOR LATCHFORD.

The Bethlehem Motors Corporation, Allentown, Pa., has appointed Joseph T. Latchford zone supervisor for an enlarged territory, with Chicago as his headquarters.

KELLER BESSEMER ENGINEER.

The Bessemer Motor Truck Co., Grove City, Pa., has appointed C. G. Keller chief engineer. He was formerly mechanical engineer with the Robeson Cutlery Co., Perry, N. Y.

CASE PROMOTES SPENCER.

W. E. Spencer has been appointed assistant sales manager for the J. I. Case Plow Works Co., Racine, Wis., with which he has been for several years.

NEW POST FOR COFFIN.

W. E. Coffin has been appointed assistant manager of the St. Louis branch of the General Motors Truck Co. at 2807 Olive street.

LARISEY AT NEW BRITAIN.

H. Leon Larisey has joined the New Britain Machine Co., New Britain, Conn., as sales manager of the tractor division and is now conducting a national advertising campaign in behalf of the New Britain tractor. He was formerly connected with the Smith Motor Truck Corporation, Knickerbocker Motors, Inc., and the Short Turn Tractor Co., Minneapolis.

J. A. POPE IN NEW POST.

J. A. Pope, for several months district sales representative for the U. S. Motor Truck Co., Cincinnati, O., in Illinois and Missouri, and previously holding a similar post in the South, has accepted the general managership of the Marion County Motor Co., Sedalia, Mo., U. S. distributor in Southern and Central Illinois.

JONES INDIANA ENGINEER.

The Indiana Truck Co., Marion, Ind., has appointed Walter M. Jones chief engineer. He will take over the engineering problems of the company which have hitherto been worked out through a board of consulting engineers. He has been with the Torbensen Axle Co. and the Sheldon Axle Co.

SMALL TRAFFIC EXPORT MAN.

Harry H. Hawke, general sales manager of the Traffic Motor Truck Corporation, St. Louis, Mo., announces the appointment of Herbert R. Small as manager of the company's export division. Mr. Small was formerly assistant export manager of the Republic Motor Truck Co., Alma, Mich.

E-B OFFICIAL TO EUROPE.

A. T. Jackson, vice president of the Emerson-Brantingham Implement Co., Inc., Rockford, Ill., in charge of sales, is in Europe, where he will visit most of the company's export organization and call on a large number of important trade connections. He will make an extended stay.

TRANSPORT INSPECTOR.

To further strengthen its excellent inspection system the Transport Truck Co., Mount Pleasant, Mich., has appointed W. C. Morgan as chief inspector. He has been with the General Motors Corporation, the Acme Motor Truck Co. and the Simplex Wheel Co.

HANDLING ECONOMY TRUCKS.

W. C. McDill has been appointed manager of the body and truck department of the Oldsmobile Motor Co., Oklahoma City, Okla., distributor for Oklahoma, Texas, Panhandle, eastern New Mexico and western Arkansas for Economy trucks.

GLEANED FROM MANY SOURCES

TRUCKMEN OF TWIN CITIES IN NEW ORGANIZATION.

The Twin Cities Commercial Carmen's association has been organized for the purpose of developing the trucking business in Minneapolis and St. Paul, establishing an information clearing house for use by all interested in motor transportation and the standardization of service and business methods. Representatives of 22 leading truck concerns of the two cities assisted in the organization. The association voted to support good roads measures and pledged its expert aid in the motorization of delivery conveyances.

The officers are: President, Harry Daffoe; vice president, Carl Will; treasurer, J. A. Donnelly; directors, W. R. Stephens, George E. Holmberg, E. W. Brehm and W. T. Clapp. A secretary to handle service and executive matters will be named later.

SHIP-BY-TRUCK TERMINAL PLANNED FOR CHICAGO.

The hauling of freight to the suburbs and neighboring towns, in which about 9000 trucks are now engaged, may be organized and systematized as the result of investigations being conducted by the Chicago Association of Commerce. A ship-by-truck terminal which will receive goods from the shippers, issue bills of lading, insure the goods and fix a schedule of rates may be the outgrowth of this movement. Another development will probably be the organization of one or more motor truck freight companies.

BIG DEMAND ABROAD FOR CASE MOTOR CULTIVATOR.

The J. I. Case Plow Works Co., Racine, Wis., has added C. S. Bristow to its engineering staff. His agricultural engineering experience extends to the foreign field. He has specialized on motor cultivator requirements and construction. The company has a highly satisfactory cultivator for home use, but expects its motor cultivator trade to assume large proportions and is not losing sight of the possibilities abroad.

TRUCKS AT BARCELONA FAIR.

The committee on the admission of exhibits for the Barcelona Sample Fair in Spain, Oct. 24-31, recently announced that trucks, autobusses and camions may be exhibited. Correspondence should be addressed to the committee at Apartado 769, Barcelona.

BUILD TRUCKS AT GRANT PLANT.

The Differential Car Co., New York city, has purchased the Grant motor plant in Findlay, O., and will soon be in operation on motor trucks, electric dump cars, utility cars and trailer dumping bodies. Several hundred men will be employed.

NEGLECT TO POST DETOUR SIGNS CAUSES HEAVY TRUCK TIME LOSS

Highway commissioners who obstruct highways and fail to install a notice to that effect at the point of detour should be tarred, feathered and "biled in ile" in the opinion of truck owners and drivers who have been victims of their carelessness. This neglect is so frequent that it really seems that some action should be taken against these officials who cause others to lose time and money through their thoughtlessness.

An instance of this evil is reported from a middle western state. On a main highway not completely paved, but in generally fair condition for motor truck travel, connecting two of the most important producing centers of the country, a small culvert was in need of repair. Local road officials tore out the existing culvert and in doing so completely obstructed the highway. Barricades and danger signals were posted beside the culvert, but no provision was made to inform the motor truck operators of the necessary detour around the obstruction.

It so happened that it was necessary for a motor truck to retrace its route some 11 miles back from the obstruction before a connecting road could be found detouring the location. It is not recorded how many trucks were thus compelled to add 22 miles of unnecessary driving to their journey by reason of the neglect to post a notice at the point of departure from the main highway. It is certain, however, that at least five heavily laden trucks expended their fuel unnecessarily to discover this obstruction. The shippers employing these trucks were paying at the rate of \$1 for every loaded mile which the trucks had to travel in the direction of the destination, thus the shippers employing these five trucks had to spend \$110 by reason of the neglect to fulfill the very simple duty of placing a temporary notice at the point of detour. The incident probably can be multiplied many times during a single spring month in almost any part of the country.

TRUCKS HAUL SUPPLIES 60 MILES TO BESIEGED CITY.

MOTOR TRUCK regrets its inability to secure pictures of the trucks being used to bring supplies to the besieged city of Adana, Asia Minor, where 18 American workers of the American Commission for Relief in the Near East, are marooned. The railway has been demolished and supplies can reach the city only by trucks, heavily convoyed, with great loss of life through the 60-mile stretch controlled by the followers of Mustapha Kemal Pasha, the Turkish national leader, who are determined to starve out the French in Adana. A number of American women are in the besieged party.

FARMER MAY LIVE IN CITY.

That the farmer of the next decade may as readily live in the city as on the farm, thanks to the motor truck, the tractor and the automobile, is the claim of Arthur T. Murray, president of the Bethlehem Motors Corporation, Allentown, Pa.

Says President Murray: "With his fast motor car the farm will be reached quickly. Tractors will do in less time the work now performed by men and horses. Fewer helpers will be necessary and they will do more work with mechanical aids; and the pay will be more liberal because production costs will fall."

YEAR'S REPAIR COST 15 CENTS.

The Detroit Gear & Machine Co., Detroit, boasts of its Federal truck which has been on the job just one year and has traveled 12,000 miles at a total upkeep expense of 15 cents, this being for repairing a broken fan belt. With capacity loads and on short hauls this truck is averaging 10 miles to a gallon of gasoline.

NEW JACKSON DISTRIBUTOR.

The Dorn Motor Sales Co., Toledo, O., has been organized to handle the Jackson four-wheel drive truck.



Truck and Semi-Trailer with Equipment Used by a Contractor for Maintaining and Oiling Roads in an Illinois County.

SIDE LIGHTS ON TRUCK INDUSTRY

ADVANCE IN TRUCK PRICES.

The Garford Motor Truck Co., Lima, O., has announced the following price increases:

Capacity	Wheelbase	Tons	In.	New Price	Old Price
2	144		\$3,450	\$3,190
2	168		3,450	3,190
3½	162		4,390	4,190
5	128		5,200	5,000
5	150		5,200	5,000

The Oshkosh Motor Truck Manufacturing Co., Oshkosh, Wis., has increased the prices of its four-wheel drive two-ton trucks as follows:

Model	Wheelbase	In.	New Price	Old Price
A	130	\$3,750	\$3,500
AA	165	3,850	3,600

Dodge Bros., Detroit, has advanced the price of the ½-ton truck fitted with the commercial panel type body from \$1260 to \$1330, and of the screen wagon type from \$1185 to \$1275.

20TH CENTURY MOVING BY TRUCK.

Living in one city and with all its household goods there in the morning and living and sleeping in a city 100 miles away and with all furniture installed in the new home was the experience of a Cadillac, Mich., family which removed to Muskegon recently. An Acme truck, with van body and pneumatic tires, brought about the transformation.

The truck is owned by Charles Foster of Cadillac and it hauled a seven-room outfit over the 100-mile route, arriving but 30 minutes after the family had reached Muskegon by train. There was no hotel bills entailed in the job and no article of furniture was damaged. This instance is a type of 20th century moving by motor truck.

FOREIGN TRUCKS IN SPAIN.

European motor truck manufacturers seem to be dominating the Spanish field at present. At Santander, for instance, but one American truck has been seen recently. Santander, a seaport, adjoins a productive mining region. The agent for a British type of heavy truck has just announced the sale of 10 to a mining company for hauling ore. French and Italian trucks have appeared and recently several German lorries used in the war were put into service.

N. Y. MAY FIGHT FREIGHT RATES.

Indications that the State of New York may fight the proposed increases in railroad freight and passenger rates are contained in an announcement that the Second District Public Service Commission will hold a hearing on the subject at Albany, Aug. 17.

PNEUMATICS ON TRAILERS.

The Warner Manufacturing Co., Beloit, Wis., is fitting its trailers with pneumatic tires.

BETHLEHEM MOTORS CORP.

TO BE REORGANIZED TO GET MORE CAPITAL

The Bethlehem Motors Corporation, Allentown, Pa., which finds itself in difficulties, due to lack of working capital, is due to undergo immediate reorganization by its creditors, chief among whom are a number of banking institutions. It is understood that the plan of reorganization has already been outlined. The chief endeavor is not to interfere with the business of Bethlehem Motors, which is said to have large orders on its books.

The company has a large inventory and this has suffered some depreciation, it is said, because of various untoward conditions which have prevented the moving of its product as quickly as would normally be the case. The new truck which is being turned out by the company is said to be in good demand and this month's output is expected to total about 400 vehicles. It is believed that the reorganization plan when adopted will work out to the benefit of the creditors and the stockholders alike. A large number of shares are said to be owned by persons residing in the vicinity of the plants and especially at Allentown, Pa. The company has 130,000 shares of capital stock outstanding according to the balance sheet of Nov. 30 of last year.

ACME CATALOGUE.

The Acme Motor Truck Co., Cadillac, Mich., has issued a most attractive catalogue under the title "Pointers to Profits." A history of the company, calling attention to the fact that the same executive personnel directs its affairs year after year; pictures of the two plants, an engineering description of its products, with pictures of machines and units thereof, and pictures, facts and prices concerning cabs and bodies, as well as trucks, are contained in the publication.

Prices on trucks are given as follows: Model B 1-tonner, \$2175; model F 1½-tonner, \$2475; model A 2-tonner, \$3050; model C 3½-tonner, \$4050; model E 5-tonner, \$5150.

BUSES IN SINGAPORE.

Three motor buses, each seating 30 people, are now in constant service in Singapore, India. A local company constructed these buses at a cost of \$9500 each. The motors used are the products of well known American and British manufacture. More buses are planned.

STANDARD OIL STOCK TO HELP.

The Standard Oil Co. of New Jersey, like its subsidiary, the Imperial Oil Co. of Canada, is planning to subdivide its common shares from \$100 to \$25 par in order to give employees an opportunity to purchase stock.

\$20,000,000 BODY CORPORATION.

The American Motor Body Corporation, New York city, has been merged from the Hale & Kilburn Co. and the Wadsworth Manufacturing Co. The authorized capital is to be \$20,000,000, of which \$15,000,000 is to be Class "A" eight per cent. preferred and \$5,000,000 will be Class "B" stock. Assets of Hale & Kilburn are to be taken in for 16,000 Class "A" stock and 50,000 shares of Class "B." Edward G. Budd will be president of the new concern and voting control will be vested in trustees, two-thirds of whom are to be named by the American Can Co., which will have a substantial interest.

Hale & Kilburn will continue as a holding company with no change in capital. Unfilled orders of the new organization are reported to amount to approximately \$15,000,000.

COASTWISE SHIPPING O. K.

President James J. Riordan of the United States Trucking Corp., announced in New York city Aug. 11 that the Teamsters' union had decided to withdraw its support from the striking longshoremen, which means an immediate resumption in full of coastwise shipping. The union decision followed the announcement by the corporation that, like the Citizens Transportation Committee, it would employ non-union men unless the union policy was changed. All freight is now being moved to and from the piers regardless of whether the goods have been handled by strikebreakers.

TRUCKS IN NEW ZEALAND.

Shows or county fairs, held during May, June and July, the winter months in New Zealand, have helped to make popular motor trucks and tractors and there will be a big market in that island for these machines during the next few years. The United States and Canada have furnished all the trucks and tractors now in that country, but British competition is certain within a year or two.

TRUCK A GOAT-GETTER.

Frank Jones of Chula Vista, Cal., recently got a contract to move a herd of over 6000 goats from Escondido to the San Vicente ranch, a distance of about 22 miles. A special double-deck rack body was put on his Federal truck and 150 large goats or 225 kids carried in each haul. The entire herd was moved in perfect condition.

TRAFFIC BUREAU AT READING.

The Reading, Pa., Chamber of Commerce is planning a traffic bureau to serve as a clearing house for local truck and rail traffic. It is intended to furnish a service for industrial concerns which lack traffic departments.

LIVE FACTS OF TRUCK HAULAGE

BIG EXPORT MARKET FOR TRUCKS SEEN BY S. A. MILES.

S. A. Miles, the automobile show manager of the National Automobile Chamber of Commerce, just back from a three months' tour of Great Britain, France and other European countries, sees a big export market for American cars and trucks.

Among other things he says:

"As a result of the war all Europe, and in fact all the world, has been completely sold on motor transportation, both for persons as well as merchandise. The truck business continues to grow, especially as the railroads over there are overtaxed.

"The establishment of new agencies and the upbuilding of new business during the next two or three years will be attended by some risks and should be undertaken only by concerns of unquestioned financial standing. It is costly to do business there now and no maker can hope to make much headway unless his representatives carry an ample line of spare parts and can render proper service.

"The European makers naturally are putting forth every effort to offset our trade in cars and trucks in other countries. The rivalry is keen but friendly, European manufacturers not overlooking the fact that America has a great advantage in the price at which it can sell its car throughout the world, owing to our big home market that permits quantity production.

"Italy has ruled that 90 per cent. of its motor cars must be exported. France has just taken off the embargo on cars, although continuing a 45 per cent. duty."

LONG TRUCKS HAUL SCENERY.

The Walton Scenery Transfer, Inc., New York city, is making a specialty of hauling scenery and properties for the theaters and for various motion picture concerns. Five United States trucks, one of 2½ tons and four 1½ tonners, all with long wheelbases, are doing this work and doing it so well that other concerns are getting into line and securing similar equipment. They handle more weight and handle it with greater speed than horse drawn wagons. They also allow the use of trailers on which baggage of traveling companies are hauled. These trucks are each credited with doing the work of four wagons in the same time and with less confusion.

PARIS BUYS TRACTION LINES.

The General Omnibus Co. and five tramway companies, comprising all the Paris and district traction lines, are to be bought by the city for \$195,120,000, payable in 30 annuities. The city will form an operating company of which Andre Mariage, present general manager of the omnibus company, will be the head. Routes will be extended and the service generally improved.

COST RECORD PROVES TO CONTRACTOR WHERE HE WAS LOSING MONEY

The advantage of keeping cost records was recently strikingly exemplified in the case of a truck operator in a small New England city. The instance also shows the disadvantage of not keeping these figures.

The operator in question had three friends in the mill business in his own city. He solicited them for work, catching the trio together in the rooms of the Chamber of Commerce. They were seemingly anxious to help out their friend and decided that each would get in touch with a mill in a city 12 miles away with which his concern did business and the six mills would keep one or more trucks of the operator on the jump hauling material back and forth.

The deal was put through, although no contract was signed. The operator was to carry goods from his city to the neighboring municipality, where he would get a return load. One of the mill men suggested a price of 20 cents a hundred and this figure was agreed upon.

The truck man looked up his cost figures at the end of one week and found that his hauling for the six mills in that time had cost him something over \$100. He immediately phoned each of his three friends and told them he was through. The reply of each was the same: "We would like to have you do the work, but we can get it done for 20 cents a hundred and business principles demand that we do so."

They are doing so today.

Someone is doing that work now who does not keep a cost record. Unless he is making up his loss on other work he will be in jail or the poorhouse at the end of the year.

The Ethiopian in the woodpile was the fact that sizable loads were carried in but few instances. The operator could make real money at 20 cents a hundred if he carried full loads both ways. He found, however, that he would get a call from one of the mills informing him that a rush order must be delivered at once. He would send a truck and the driver would find one case to be carried, total weight 500 pounds. For a return load he would get another case, this one probably weighing 600 pounds. At 20 cents a hundred the net return for hauling 1100 pounds 24 miles would be \$2.20. No money in that.

SINCLAIR EXPANSION.

The Sinclair Consolidated Oil Corporation has completed a new barreling and compounding house at its East Chicago refinery for handling lubricating oils and greases. It is one of the largest of its kind in the United States. This addition is in connection with plans of expansion of the plant which have been under way for several months.

KNOW YOUR TIRE SIZES!

"It would be well for truck owners and drivers to jot down in a memorandum book the sizes of their tires and the proper oversizes for them," according to the sales engineer of the Fisk Rubber Co. of Chicopee Falls, Mass. "The matter is not a particularly confusing one," he says, "and due to the increasing number of trucks on which pneumatics are being used, owners are anxious to familiarize themselves with these details.

"At present there are six sizes of pneumatic truck tires on the market. They are the 34 by 5 inch, the 36 by 6 inch, the 38 by 7 inch, the 40 by 8 inch, the 42 by 9 inch and the 44 by 10 inch. The line is so prepared that a 36 by 6 inch tire will fit a 34 by 5 inch rim; the 38 by 7 inch tire will fit a 36 by 6 inch rim; the 40 by 8 inch tire will fit a 38 by 7 inch rim, and the 42 by 9 inch tire will fit a 40 by 8 inch rim. There is no rim made at present for a 42 by 9 inch tire, and that leaves the 44 by 10 inch tire for its own size rim alone.

"All truck wheels, now constructed for pneumatics, are 24 inches in diameter, and some owners do not understand why a 40 by 8 inch tire cannot be used on a wheel of the same diameter that will carry a 36 by 6 inch tire. The reason is that while the wheel is of the same diameter in each case, the felly which is prepared to receive a rim fitted to a 36 by 6 inch tire is not wide enough to carry a 40 by 8 inch rim."

U. S. TRUCK DISTRIBUTORS.

Wolf Bettigole, 14 John street, Springfield, Mass., is now handling United States trucks in that city and the county and is giving service to all buyers in that territory.

The Peerless Garage, Friar's Point, Miss., has been given additional territory in that state and in Arkansas and will henceforth be a distributor in that territory for United States trucks, with headquarters at Clarksdale, Miss., and a branch at Friar's Point.

John A. Forsythe has closed a sub-contract under the Mid-City Garage and Motor Supply Co., Baltimore, Md., to handle United States trucks in Hagerstown and the eastern half of Washington county.

TRUCKS SAVE HIGH RENTS.

The Brightwood Laundry Co., Springfield, Mass., believes that a truck fleet will save that concern the necessity of having a down town location and thereby eliminate excessive rents. The company has ordered six Oldsmobile trucks as part of its new plant and equipment.

NEW YORK HAS 22,572 MOTOR BUSES.

The latest registration figures show that there are 22,572 motor buses in New York state, of which 9136 are in New York city.

MANY ANGLES OF THE INDUSTRY

PLAN SECOND NAPOLEON OFFICE TRUCK ON WHEELS.

The Napoleon office truck, after its splendid performance on the International Good Roads tour when it was used as an office by W. D. Edenburn, manager of the tour, has continued its interrupted truck trip to the East, where it will play its part toward establishing agencies for the Mohican Motors Corporation, distributor for the Napoleon Motors Co. Stops will be made in every town and city along the Lincoln Highway east of Pittsburgh. Upon reaching New York it will tour that state and then New England.

C. W. Waughop, Michigan sales manager, and Joseph O. Peet, Napoleon sales representative, occupy the truck during the day as a complete office and at night as a residence. The necessary living outfit is carried snugly stored underneath the truck. The innovation has scored so signally that W. G. Rath, vice president and general manager, and C. D. Peet, sales manager of Napoleon Motors Co., are planning to place a second office on wheels for midwest territory.

TRUCKS RELIEVE NEW ORLEANS FREIGHT JAM.

About 225 trucks have been mobilized under the direction of the Frank Weinberger Automotive Parts Co., to work as a unit in relieving the unprecedented freight jam at New Orleans. The merchants pay the Weinberger Co. and this concern does all the business with the truck owners and drivers. By organization the work has been speeded up in a marvelous manner. Railroad officials and water shipping agencies are doing what they can to help the cause. Civic bodies are also assisting.

NO MORE ARMLEDER WAGONS.

The O. Armleder Co., Cincinnati, O., has been forced to discontinue the manufacture of Armleder wagons because of the strong demand for Armleder trucks. The change allows new space for truck manufacture and high speed machinery of the latest design has been installed in the new quarters to do the fine machine work necessary on the Armleder trucks. The call for this product has doubled this year and indications point to another doubling of orders in 1921.

KREEB NOW A JOBBER.

William H. Kreeb, southern district manager for Master trucks since that branch was established, has resigned and opened a place of business as a jobber of automotive specialties at Sixth and Vine streets, Cincinnati, O.

BRUSSELS SHOW DEC. 10.

Brussels, Belgium, is making plans for its first post-war automobile show, to be held in the Palais du Conquanteaire, Dec. 10-19.

NEW YORK PLANS TO WORK 200 TRACTORS FOR SNOW REMOVAL

New York is considering the purchase of 200 tractors for the purpose of removing snow and keeping the streets open during future winter seasons. Last winter a Cletrac showed the officials of the metropolis the ability of a tractor to do this work and the contemplated purchase of the fleet of tractors is the result.

Bids have been sent to manufacturers to take part in a demonstration on the streets of the city July 29. This will consist of the removal by plows attached in front of the tractor of a four-inch layer of sand supposed to represent snow. City engineers will be in charge of the tests, which are designed to show the relative merits of the various tractors for this work.

A BAS' THE CUT THROAT.

"\$2 per hour."
"\$3 per hour."
"Special rates."
"Get our rates."
"At lowest rates."
"Special low rates."
"We save you money."
"Our rates will interest you."

The above challenges taken from eight of the 22 trucking service "ads" in one issue of a newspaper published in a city of a quarter million people show the spirit of brotherly love which reigns in the trucking business.

We know of no stronger argument for the new national association of truck owners engaged in general haulage than the above.

Either the fellow who is getting \$3 per hour is making a lot of money—which we do not believe—or the fellow who is getting \$2 is losing money—which we think highly probable.

Mr. "Special Rates," "Mr. "Get Our Rates," et al., are all losing the legitimate return which their investment, their labor, their experience, their energy, their ability and time deserve.

Organization, local or national, or both, would set things right.

THE COST OF DELIVERY.

The Chicago Tribune recently published a table showing the relative cost of delivering the product as related to total production cost in 14 lines of industry as follows: Ice, 45.8 per cent.; soft drinks, 20.2 per cent.; brick, 19.9 per cent.; bakeries, 19.8 per cent.; laundries, 15.3 per cent.; coal and wood, 15.2 per cent.; ice cream, 14.9 per cent.; dairy products, 12.1 per cent.; lumber, 6.8 per cent.; groceries and meats, 4.4 per cent.; hardware, 3 per cent.; furniture and carpets, 2.8 per cent.; department stores, 1.5 per cent.; wholesale meats, 1.1 per cent.

COMMERCIAL HAULERS PERFECT ORGANIZATION.

The National Association of Commercial Haulers, which was organized at Chicago, June 30, will hold its next national conference at Milwaukee, Wis., commencing March 21, 1921. The organization is being fast perfected and the executive personnel is rapidly attaining a nation wide character. The nine separate committees will include: Executive, auditing, labor, legislation, rates, insurance, finance and uniform methods.

The officers so far installed include Milo W. Bekins, Los Angeles, chairman of the finance committee and member of the executive committee; R. A. Chapin, Portland, Ore., as vice president of the western district, and C. R. Collins as secretary and general manager. Two division superintendents have been appointed by Mr. Collins. These are Fred Born, Milwaukee, Wis., who is managing secretary of the Transportation Association of Wisconsin, for the western district, and J. L. Vellan, Cleveland, O., who is managing secretary of the Cleveland Transportation association, for the central division.

FREE LAND FOR GARDENING TO NAPOLEON EMPLOYEES.

The Napoleon Motors Co., Traverse City, Mich., offered a tract of land for cultivation by its employees to reduce living cost and 85 accepted. The land was not only given free, but it was put into condition for the immediate planting of crops by plowing, dragging and fertilization. Some time ago the company presented to every employee a life insurance policy. This interest in the workers has been returned by the worker's interest in his job. The cooperation between employer and employee is manifested in increased production and good workmanship.

GMC WELFARE WORK.

The General Motors Corporation has engaged Rev. Howard J. Clifford, formerly of the First Presbyterian church, Saginaw, Mich., and for several years in charge of welfare work for the Buick Motor Co., to take charge of the opening of a new department of personal relations, the influence of which will reach the 60 cities in which General Motors has plants. He will be on the personal staff of President W. C. Durant.

WANTS BUSES REGULATED.

The Federal Electric Railway Commission on Aug. 17 submitted to President Wilson measures to curb the operation of motor vehicles which "threaten the service, credit and solvency of the street railways." It is urged that they be subject to regulations by state commissions. The commission approves their value in service supplementary to the trolley lines, but objects to them as competitors.

NEWS NOTES OF TRUCK UTILITY

OLE HANSON AT DEDICATION OF MENOMINEE PLANT.

The dedication of the Menominee Motor Truck Co.'s new plant, adjoining the Four Wheel Drive Co.'s factory at Clintonville, Wis., on Saturday, Aug. 14, was featured with an address by Ole Hanson, Seattle's former "Fighting Mayor." Several thousand people attended the ceremonies.

The new Menominee home is entirely completed and the work of moving in machinery for the assembling of Menominee trucks is under way. The new company will make a series of one, 1½, 2, 3½ and five-ton rear drive trucks.

NAPOLEON OFFICE TRUCK READY FOR GLIDDEN TOUR.

The Napoleon Motors Co., Traverse City, Mich., has offered the use of its office truck, which has been attracting big attention everywhere, for the Glidden tour to be run in 1921. This truck recently gave splendid service on the International Good Roads tour, being the headquarters of Tour Director Eddie Edenburn, automotive editor of the Detroit Evening News.

NEW BOSTON HOME FOR TRIANGLE AND ACME TRUCKS.

Eugene F. Lally & Sons, distributor of Acme and Triangle trucks, has moved from Cambridge, Mass., into the automobile district of Boston, taking over two buildings, 96 to 102 Brookline street. The building has 70,000 square feet of floor space which is sufficient to display the trucks and adequate area enough for an up-to-date service station.

TRUCK HAULS POTATOES, PAYING FOR ITSELF IN 70 DAYS.

A potato grower in Aroostook County, Maine, F. O. Simeson of Limestone, recently purchased a Packard truck with which he does work that would ordinarily require 20 teams in hauling his crops up a steep grade 7½ miles to the railroad. At this rate the truck paid for itself in 70 days.

TRUCK TRAVELS OVER 30 MILES PER HOUR.

A Duplex Limited truck, driven by H. G. Pendell of Los Angeles, Cal., recently made a record run from Los Angeles to El Centro, covering the 260 miles in eight hours and 26 minutes at the rate of 30.83 miles an hour. Most of the trip was made in a blinding rain storm.

HAS M. T. M. A. ADVERTISING.

The Motor Truck Manufacturers' association, Chicago, composed of 28 leading truck manufacturers, has placed its advertising account with the Akron Advertising Co., Akron, O.

ENTIRE BUILDING RESERVED FOR MINNESOTA STATE FAIR TRUCK SHOW

Questionnaires sent out recently by one of the leading tire manufacturers presage the placing of 1,000,000 trucks on the farms of the country, during the next few years, according to Cal Sivright, in charge of the big truck show at the Minnesota State Fair, Sept. 4 to 11.

Knowing that every farmer in the northwest is interested in investigating the practicability of the farm truck for farm work, Mr. Sivright has arranged for the display of all the leading types and weights of trucks at this year's show.

So much interest in the truck show has been shown by truck manufacturers and dealers throughout the country that an entire building has been set aside for the show. This building, called the Steel Machinery building, is located on the top of Machinery hill. It has a floor space of 35,000 feet, being 500 feet long and 70 feet wide. This is the first time that a truck show of such magnitude has ever been held by any fair in the world.

Not only will trucks for farm use be exhibited in large numbers, but trucks suitable for heavy haulage on city streets and hard surfaced country roads will be displayed along with the light trucks for delivery purposes.

TRUCKS MOVE CIRCUS.

Robinson-Jennings Amusement Co. is planning to completely motorize with Napoleon trucks as a result of the results obtained from those now in its service. Carrying a 100 per cent. overload the company moves 75 tons of material on 1½-ton Napoleons, pneumatically shod. With railroad transportation as it is Mr. Robinson says that trucks are best adapted for circus transportation, being both dependable and economical.

HANDLING GRAMM-BERNSTEINS.

The Western Automotive Co., 126 North Main avenue, Sioux Falls, S. D., with capital stock of \$100,000, W. C. Brown, manager, is distributing Gramm-Bernstein trucks in South Dakota and in parts of Iowa and Minnesota.

NEW RAINIER DISTRIBUTORS.

The Rainier Motor Corporation, New York City, has recently added to its sales organization the following distributors and dealers:

Abbott Automobile Co., New London, Conn.

Douglas Bros., John street, Bridgeport, Conn.

H. M. Gibson Motor Co., Inc., Miami, Fla.

Clarence R. Royer, South Second St., Easton, Pa.

W. M. Grigsby, Tampa, Fla.

John B. Pierce, 322 E. Lafayette St., Syracuse, N. Y.

Harrington Motor Co., Omaha, Neb.

Superior Garage, Perth Amboy, N. J.

DOTY SEES BIG SALES IN SOUTH.

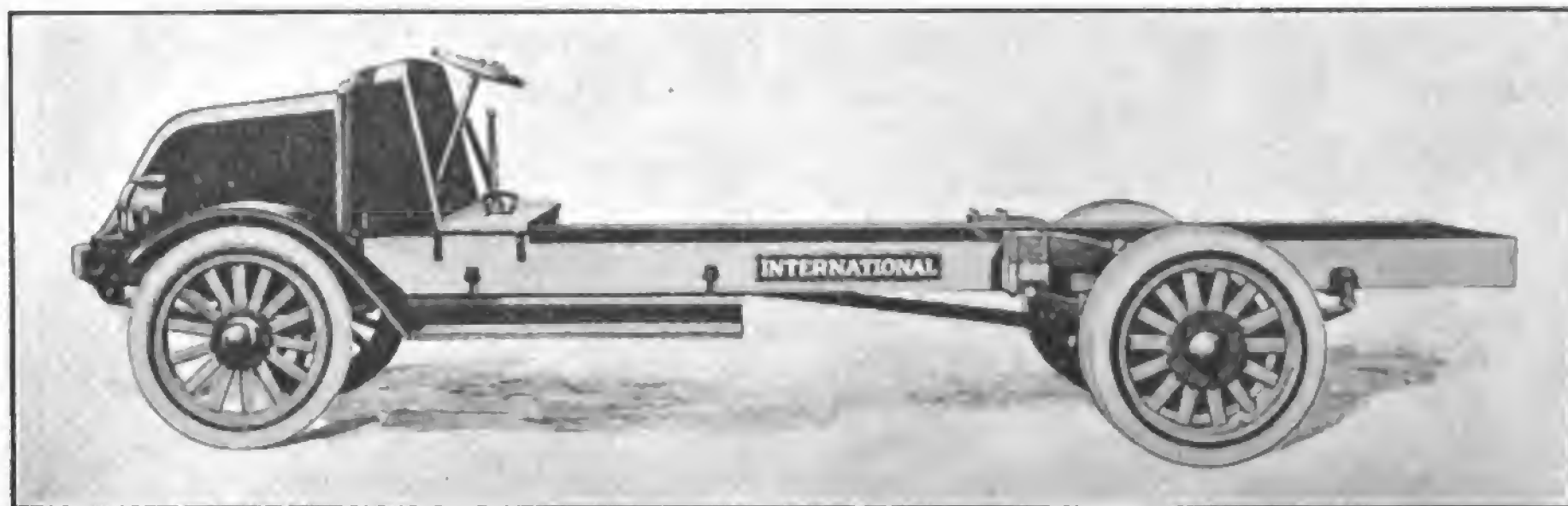
C. F. Doty, general sales manager of the Sanford Truck Co., Sanford, N. Y., is on a tour of the South and is convinced that this territory offers the most fertile field for future truck sales of any part of the country. He forecasts that half of the future motor truck business of the United States will come from that section. He is particularly enthused over the possibilities in the five states along the gulf. He sees southern ports as big export centers for the truck trade in the Latin-American countries. Lack of proper railroad service is causing the South, he says, to look to the power wagon service for transportation.

TRUCKS IN PHONE SERVICE.

The New York Telephone Co. uses 220 motor trucks and two 10-ton trailers in its maintenance department. Of these 68 are ¾ ton trucks, 56 are 2½ ton trucks, 32 are three-tonners, 31 are one-tonners, and the others are: Five-tonners, 18; 3½-tonners, 14; 1½-tonners, one. The Southern New England Telephone Co. operates 46 trucks.

NON-SKID TEST.

A non-skid test, at which all the leading tire concerns will be represented, will be a feature of the Safety First exposition, Aug. 23-27, which will be held in conjunction with the Traffic Officers' convention in San Francisco.



The International 3½-Ton Truck Chassis Without Driver's Seat, Showing the Rear Spring Mounting Original with This Make.

STATE CONTROL OF TRANSPORTATION

AMERICAN FORCES IN EUROPE HAD 26,000 TRUCKS IN USE AT WAR END

Figures from the headquarters of the Motor Transport Corps at Tours, taken two months after the armistice, but just made public, show that there were about 26,000 trucks in the service of the American Expeditionary Force at that time.

First place among the heavy vehicles goes to the Packards, of which there were 3992 in service on that date. All but about 25 of these were trucks, mostly in the two and three-ton sizes.

Next on the list is the Nash, with 3735 vehicles, all of which were trucks, and all heavy. There follow in order:

GMC, 2644, all trucks.

Pierce-Arrow, 2235, with about a score or so of cars and the rest heavy duty trucks.

Dodge, 3250 vehicles, of which about 2000 were passenger cars and the rest ordnance delivery wagons.

Others were: F. W. D., 1733, all trucks; Riker, 1150, all trucks; White, 1020, all trucks; Mack, 902, all trucks; Q. M. C., 786, all trucks (these were the "Liberty trucks"); Kelly-Springfield, 616, all trucks; Garford, 572, all trucks; Peerless, 422 all trucks; Federal 203, all trucks. There were 43 other makes in use, with fewer than 200 each.

ST. LOUIS LIMITS LOADS.

The Board of Aldermen of St. Louis, Mo., has passed an ordinance fixing truck load limits at 28,000 pounds, with not more than 22,400 on any one axle or more than 800 pounds to an inch of tire width. Trucks are not permitted to carry loads more than 25 per cent. above rated capacity. Certificates may be secured in special cases for loads greater than the limit named. A fine of from \$5 to \$500 is provided for violators of this law.

PRICES ADVANCED THROUGH LACK OF TRANSPORTATION.

A. W. Douglas, chairman of the committee on Statistics and Standards of the Chamber of Commerce of the United States, in his monthly bulletin on business conditions, says:

"Lack of transportation is the principal hindrance to better and larger distribution. This operates to maintain and even advance prices because of the comparative scarcity thus caused. Railroad rate advances point the way to an ultimate solution, but, at the best, it seems a long story. Unless experience be misleading the new purchasing power of the railroads will be a strong factor in maintaining both prices and the volume of business."

GRADE TESTS AT COLUMBUS.

The Engineering Division of the National Research Council is to undertake an investigation at Columbus, O., to determine economical grades on rural highways. The effects of grades on motor trucks will be the first problem attacked. The programme for the tests follows: Three-quarter-ton trucks with pneumatics, Sept. 1; one-ton trucks one with pneumatics and one with solids, Sept. 5; two-tonners, one with solids and one with pneumatics; 3½-tonners, equipped with both kinds of tires, Sept. 12, and five-tonners with solids, Sept. 15.

A TRUCK VETERAN.

Herman Bock, Detroit furniture dealer, has a Federal truck in his service which is eight years old this month and has never been in the repair shop except for an occasional overhauling. Today it is hauling more and bigger loads than ever. The best compliment of manv paid this veteran vehicle came recently from a salesman for another truck who candidly admitted: "This truck looks good for eight years more of service." The truck paid for itself years ago and all its hauling today is clear profit.

TWO STATES EXPERIMENTS WITH STANDARDIZED PUBLIC SERVICE

State railway commissions in California and Nebraska are standardizing service by motor truck freight lines and it is interesting to note that in both states many concerns of this nature are operating profitably and at the same time an excellent system of transportation is provided the public.

In a number of other states movements are under way to put inter-city truck transportation under control of state utility commissions.

In California the commission has full power to regulate common carriers and 700 motor freight and passenger routes are operated under its supervision. Regular routes have been laid out and the service could not be improved upon.

In Nebraska the commission has standardized rates for motor trucks transportation between Omaha and points within a radius of 60 miles. The original schedule of rates was found to be unsatisfactory and after six months' trial they were considerably increased. The new rates now appear to be satisfactory to both shippers and carriers.

Several other states are working toward similar systems of truck transportation control, with the experience of California and Nebraska in mind.

Rural Motor Truck Terminals Inc., which with 17 associated companies, operates out of Minneapolis and St. Paul, Minn., had adopted tariff sheets which conform in appearance to railway freight tariffs. Stations, routes and mileages are scheduled with rates for three classifications of freight. This motor truck service at present extends to more than 100 cities and towns by nine definitely established highway routes. The longest is from St. Paul to Duluth, 161 miles. Others range from 17 to 65 miles.

A page of introductory information describes the service offered and carries two extremely significant paragraphs:

The rates charged by this company are extremely reasonable as compared with other transportation rates, considering the superior service. While the motor truck is not new to the farmer, our service fills the long felt need in transporting livestock and produce from farm to market. The merchant can keep his stock fresh and up to date and get delivery the same day goods are ordered. Our service enables anyone within a reasonable distance to enjoy the benefits of motor truck hauling at a very reasonable cost and saves much valuable time.

Operating conditions will of course depend entirely on road conditions. No doubt there will be times when we cannot operate. These times will be few. When paved roads are a reality, this obstacle will be removed.



A Parker 3½-Ton Truck Chassis Equipped with a Combination End-Discharging Body and a Hydro Hoist.

UNUSUAL PHASES OF TRUCK USE

POLO PONIES CARRIED TO TOURNAMENT IN FLEET OF SPECIAL TRUCKS

Seven big trucks transported the ponies of the Myopia club a distance of 110 miles from Hamilton, Mass., to Narragansett Pier, R. I., for the polo tournament the first week of this month. Each truck carried from five to seven ponies. The motorists left Hamilton at 10 a. m. and the ponies arrived at the Pier, sound in wind and limb, at 10 p. m. They gave a fine account of themselves in the tournament.

This was the first time in the history of the club that the ponies were shipped wholesale by truck, although individual members had sent their equines along in that fashion last year, it being as a result of the success of their experiments that the scheme was carried out on a bigger scale this year. It was felt that there would be difficulty in securing railroad cars and that the ponies might be on the road one or more nights. Their safety was also a first consideration.

Liberty & Co., general truckers of Boston, were engaged to move the horses and used excellent judgment in having their seven trucks on the ground early, as it took more than three hours to get the animals aboard the big trucks.

One pony proved so obstreperous that it was left behind. This high-strung animal, which has enjoyed international fame, considered herself too aristocratic to travel by truck, undoubtedly figuring a limousine as about her speed. She threw herself to the floor of the slightly packed truck and though it would appear from the noise of thrashing and kicking that every thing would be shattered to pieces, was quickly gotten upon her feet again with only the slightest of scratches. As she was the first pony in it necessitated the unloading and reloading of the whole truck. It is needless to say she was kept at home.

A troop of drivers, mechanics and carpenters were employed in fixing up the ponies for the journey. A huge load of lumber was also used. The animals were boarded in about as a sofa or armchair would be prepared for a similar jaunt.

Two methods were used and the ponies seemed in each case to arrive successfully. The original plan was to alternate the direction in which the animals faced and to separate each one with a big two-inch plank. In two of the trucks, however, the ponies stood all facing the same direction, flank to flank, without any partition between. This, of course, was much simpler and apparently equally good.

REO DEALER MOVES.

The Porter Reo Motors Co., Topeka, Kan., has removed from 624 Quincy street to 208 East Sixth avenue, in order to acquire larger facilities for displaying trucks and automobiles.

CINCINNATI TRUCK PRODUCTION NEAR NORMAL.

Publicity, through which the wives of the machinists, were told the true condition of affairs, was the chief method used by the United States Motor Truck Co., Cincinnati, to defeat a recent strike at its plant. Public sentiment was also enlisted in the same manner. Page advertisements were used in the daily papers and these later reproduced in a folder, copies of the latter being mailed to thousands. Many wives of strikers saw the situation in a new light and used their influence in getting their husbands back to work. Ministers, school teachers and others were also sent copies of the folders. The truck manufacturing concerns in that city are rapidly nearing normal conditions.

"TRANSPORT HEADLIGHT."

The Transport Truck Co., Mount Pleasant, Mich., has a new output in the shape of an official house organ, "Transport Headlight." F. L. Edman, advertising manager of the company, is editor. While its chief aim is to assist distributors and dealers in every branch of Transport merchandising, the Headlight carries news of interest to the general automotive world. The new publication comes from the press on the 10th of each month.

STUDIES BUS SYSTEMS ABROAD.

Public Service Commissioner Lewis Nixon of New York city is in Europe studying the motor bus question as it relates to the use of these vehicles in supplementing street car service. He will visit cities in England and the continent where buses are extensively used and study the system under which they operate. He looks for a greater use of buses in this country within the next few years.

BANKERS INVEST MILLIONS IN REORGANIZATION OF THE MAXWELL COMPANY

All the interests have coordinated effectively to restore normal conditions at the Maxwell and Chalmers plants and the future of these concerns is assured by developments of the first half of this month.

Chief among the developments are the following:

First. Bankers for the Maxwell Motor Co. have advanced between \$3,000,000 and \$4,000,000 to tide it over until its affairs are reorganized on a permanent basis.

Second. The affairs of the Maxwell company will be worked out by a management committee headed by Walter P. Chrysler, executive vice president and general manager of the John N. Willys interests. He will be assisted in financing and reorganization plans by J. R. Harbeck, vice president of the American Can Co., who also is closely allied with the Willys interests.

Third. Because of existing conditions in the financial and business world, the joint committee representing the Maxwell and Chalmers companies has extended indefinitely the time for declaring operative the agreement under which the two companies would merge.

Fourth. A new general manager will be employed for the Maxwell company, which is operating the Chalmers plant under lease. This man has not been selected and the final choice will rest with Chrysler.

REINDEERS AS MOTIVE POWER.

Reindeers are to be used as the motive power to supply missionaries and natives in Hudson bay territory with both food and a transportation system. The Dominion government has charge of plan.



A Pals 3 1/2-Ton Truck Chassis, 190 inches Wheelbase, and Standard Platform Body, One of a Fleet Operated by George Corpron of Providence, R. I., Decorated for a Circus Parade.

Garage and Service Station Machinery Tools and Equipment

MOSSBERG "MAJOR" SET.

Manufactured by the Frank Mossberg Co., Attleboro, Mass.

Owners of Ford machines will find in the "Major" Wrench Set all the tools necessary for making adjustments to the chassis and engine. With this set of



wrenches in the tool box the owner or driver can do any work necessary while on the road. A reversible ratchet handle is included that fits all the socket wrenches.

HYDRAULIC HOIST FOR TRUCK BODIES.

The Hydraulic Hoist Manufacturing Co., St. Paul, Minn., manufacture a hydraulic hoist for truck steel dump bodies which is produced in 23 models, so that practically any requirement or operating



condition can be met with standard equipment.

The hoist is located on the chassis directly back of the seat or cab and in this location requires but little space, while it can be raised with no leverage against the hoist. This design affords, it is claimed, the largest possible margin of surplus power and factor of safety.

The hoist is close to the driving connection and is so constructed that road vibration has very little if any effect upon it, while it is very accessible. A power take-off may be installed when desired and practically becomes a part of the truck transmission, meshing with the primary gear. In most of the hoists manufactured by this company the high pressure line has been eliminated. The pump is attached directly to the cylinder, either through the use of a cast steel manifold bracket or by bolting direct to the forged steel base plate, which is cored for the cylinder connection.

UNIVERSAL SCREW CABINET.

Hobart Brothers Co., Troy, N. Y., make a screw filing cabinet that has many features that recommend it to truck service stations for use in stock rooms, for it greatly conveniences keeping track of screw stock. The cabinet has strong well made drawers to hold small accessories,

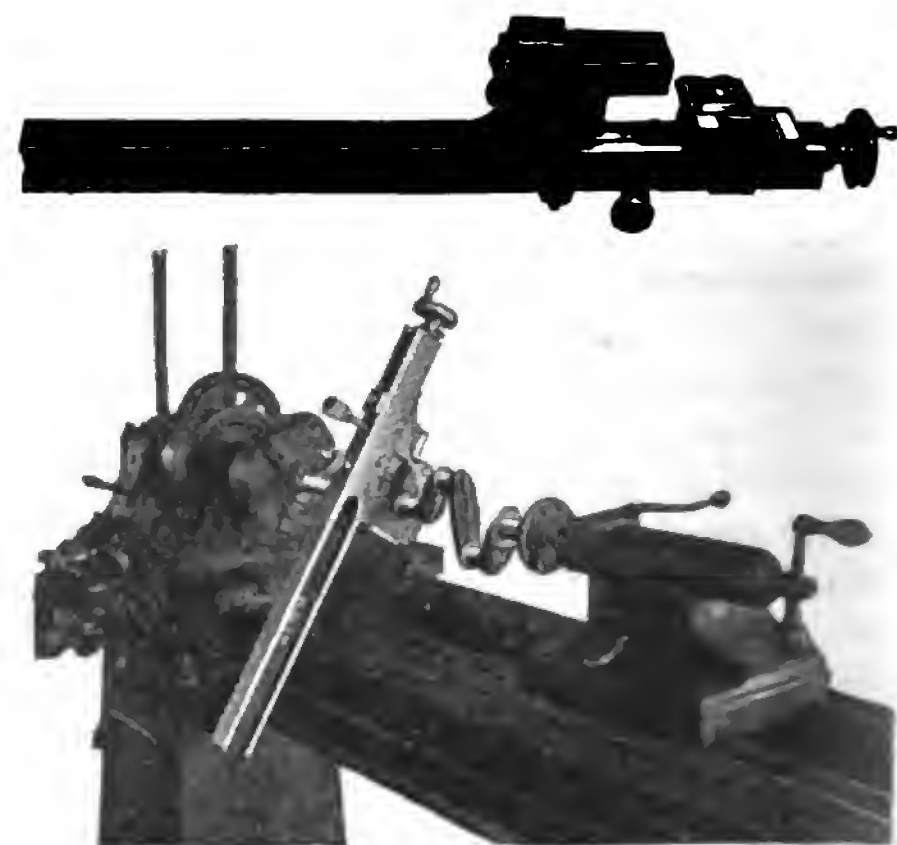


screws, nuts, bolts, brads, nails and other small parts that are generally used for repair work. It is stated that such a cabinet will save its cost many times over, for waste or loss is minimized and the contents are readily accessible when needed.

WEBER CRANK PIN RETURNING TOOL.

The Sawyer-Weber Tool Manufacturing Co., Los Angeles, Cal., builds a special tool for smoothing crankpins that are scored, out of truth, or roughened. It is

claimed to be especially suited for use in truck service stations. The time required to restore a crankpin is greatly reduced when compared to work in a lathe. As shown in the cut, the crankshaft is held between centers in a lathe, while the tool



is fitted to one of the crankpins and is carried around with the shaft, the handle resting against the side of the lathe. The manufacturer states that 30 minutes is about the average time required to true a pin and that the work is equally as well done as with a lathe. A hand wheel at the top regulates the pressure on the cutters and this regulation can be made while the tool is in motion.

NEW TYPE LOCK WASHER.

The Safety Nut & Bolt Co., 1236 Euclid avenue, Cleveland, O., produces a new lock washer known by the trade name of Stevenson Safety Nut & Bolt. It consists of a combination bolt, washer and nut, the bolt being constructed with two longitudinal tapered grooves, the washer with two inner extending lugs to fit the grooves in the bolt, while the nut has chucks on its lower and outer surfaces. With this construction the washer is put on the bolt before the nut. The inner extending lugs do not bind in the base of the grooves until the washer has passed on to the bolt for two-thirds of the length of the tapered portion of the grooves.

This device is specially designed for use in machine shops, service stations, etc., for replacement purposes.



DOVER ELECTRIC SOLDERING IRON.

The Dover Manufacturing Co., Dover, O., produces an electric soldering iron for radiator repairers, sheet metal workers, and garage and service station repairers who do soldering. It is manufactured in several sizes, each equipped with a special tip besides the regular tip, so it may be used for a wide range of work.



Dover electric soldering irons are guaranteed against mechanical and electrical defects, and the factory will replace faulty parts free of charge within one year from date of purchase. The outfits are complete with the necessary tips for the weight of iron desired, connecting cord and plug, to fit any electric light socket.

RED DEVIL PIN PUNCH SET NO. 483.

The Smith & Heminway Co., Inc., Irvington, N. J., manufactures a new pin punch set, No. 483, which is especially designed for truck service station repairers.



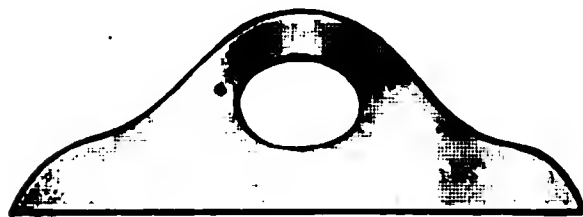
The outfit consists of six tools nine inches long, packed in a khaki carrying case of pocket size and includes the following tools in point size: $\frac{1}{4}$, $\frac{3}{32}$, $\frac{3}{16}$, $\frac{7}{32}$, $\frac{1}{4}$ inch and $\frac{9}{32}$ inch.

UNIVERSAL SHIM BLANKS.

The Utility Products Co., Waterbury, Conn., is producing shim blanks for service station repairers which have exclusive qualities that recommend them.



Universal shim blanks have holes accurately centered, are made from the best grade of brass and can be easily fitted to any bearing by trimming the edges



with a knife or shears. They are sold in boxes containing the following sizes and assorted thicknesses as follows: Size $2\frac{1}{2}$ by $1\frac{3}{8}$ inches (100 shims to a box); or 40 .002 inch shims, 40 .003 inch shims, 10 .005 inch shims; 10 .010 inch shims. Assortments are also put up with 100 $\frac{13}{32}$ inch blanks for $\frac{3}{8}$ inch bolts, or 100 $\frac{17}{32}$ inch blanks for $\frac{7}{16}$ inch and $\frac{1}{2}$ inch bolts.

CLOUD PISTON INSERTER.

The Cloud Accessories Corporation, Chicago, Ill., is making a device for inserting pistons and rings into engine cylinders that is specially useful in truck service stations as a time economizer.

It consists of three flexible strips of 22-gauge nickel plated, cold rolled steel, joined to a cross member at one end. Two bolts with wing nuts are spaced equidistant in the cross member and are fitted



with washers. When used the three strips of flexible steel are passed around the piston and rings, giving the piston about $\frac{1}{4}$ inch leeway into the cylinder. The steel strips are then drawn tight and fastened with the two wing nuts, forcing the rings into the grooves. The piston is then lowered into the cylinder without difficulty. It is stated that the device is universal and can be changed from one size to another in a few minutes time.

WASHBURN TORCH.

The Washburn Burner Corporation, Kokomo, Ind., makes an acetylene torch for service station repairers, claimed to be especially useful for those located a distance from a source of supply of oxygen, who must depend on acetylene gas.



The Washburn torch has a patented mixing valve that supplies the air in proportions to afford a flame to meet any need, and may be regulated from a needle point to full length. This torch is adapted for repairing radiators, welding and all work where a small, intense flame is desired. The torch is fully guaranteed by the manufacturer and any defective part will be replaced upon its return to the factory for examination.

CHARGING PANEL FOR STORAGE BATTERIES.

The Cutler-Hammer Manufacturing Co., Milwaukee, Wis., is producing a new charging panel for lighting, starting and ignition batteries that from its simple construction and operation is especially adapted for service station use.

The outfit consists of a slate panel mounted on a wall type frame, carrying a low current cut-out, single pole main line



knife switch, and fuses, ammeter and 30-step rheostat, with capacity for charging any number of cells in series from three to 42, or the maximum number that can be charged on the voltage of the circuit. The resistance is mounted in the frame back of the panel. Direct current is to be used as the source of supply.

New Motor Truck Accessories and Supplies

CASSCO ENGINE DRIVEN TIRE PUMP.

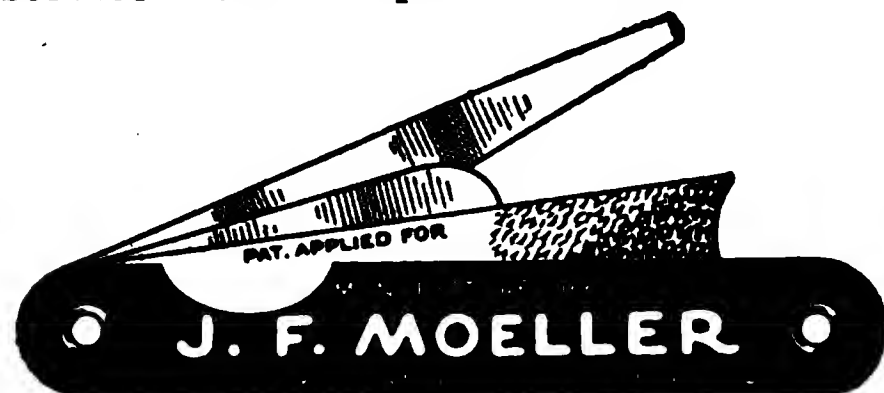
With the use of large size pneumatic tires for heavy trucks there is a demand for equipment for inflating them when tire trouble is met on the road, or when changing them in the garage. The air pressure systems found in public garages is usually not high enough for large tires. To be sure of an air supply at all times



the best insurance is a pump on the motor pump shaft. An equipment suitable for this work is the Cassco engine driven pump. It is very simple in construction and requires very little space on the engine. The air from this pump, the maker claims, is dry and clean as it enters the tire. The design of the piston and cylinder prevents oil spray entering the compression chamber. The pump will inflate a 34x4-inch tire to 80 pounds pressure in 90 seconds and other sizes in proportion.

SPARK PLUG TESTER.

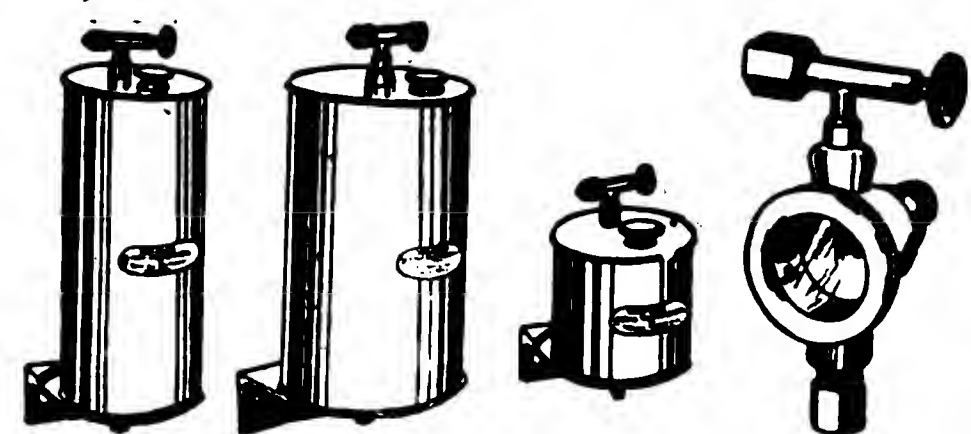
J. F. Moeller, 10822 South Western avenue, Chicago, Ill., produces a spark plug tester in the form of a four-bladed knife which is exceptionally useful for service station repairers. The tester is



designed as a four purpose pocket tool. Two blades when open are used for "shorting" spark plugs, a third is a file for cleaning the points of the plug, while the short, thin blade is a gauge for the gap between spark plug points.

WHITNEY GAS HUMIDIFIER.

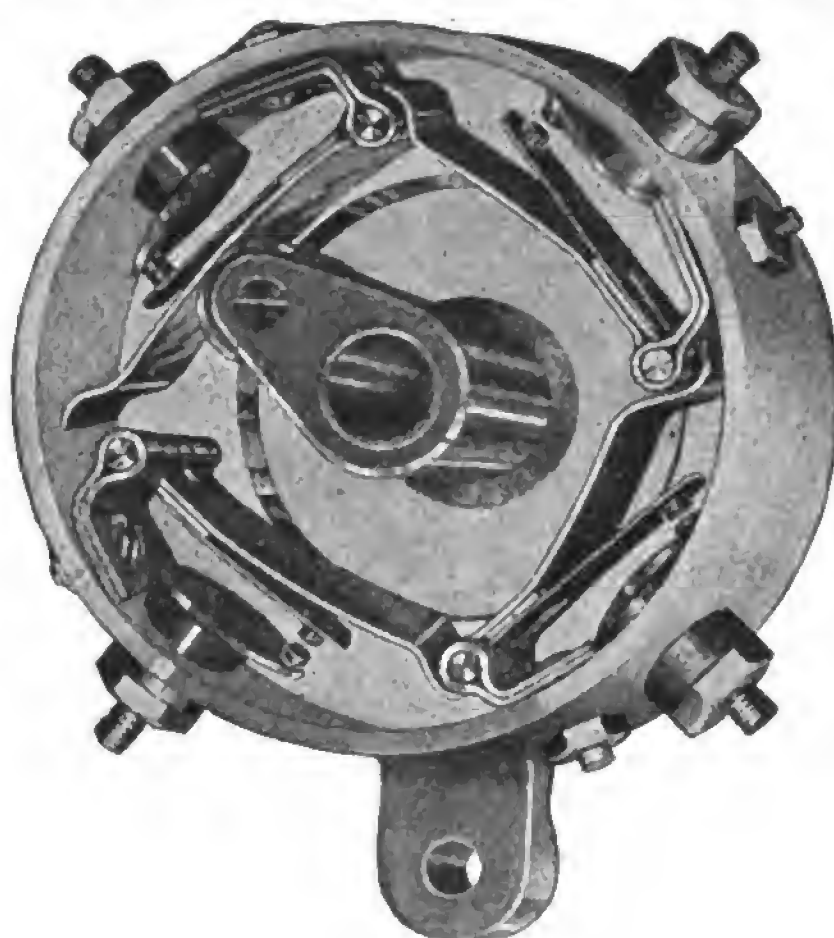
N. S. Whitney, 74 Nichols street, Lewiston, Me., manufactures gas humidifiers for automobile vehicles which are designed to supply a water vapor to the fuel, which is claimed will increase flex-



ibility, increase vehicle mileage and minimize carbon deposit. It consists of a cylindrical tank that is fastened to the dash, and is connected by copper tubing to a gauge and cock on the front of the dash, which shows the volume of water passing to the intake manifold, and the necessary tubing to connect it to the intake manifold. The flow of water is regulated by the cock on the dash.

K-L TIMER FOR FORD TRUCKS.

The M-R Co., 122 North 14th street, Lincoln, Neb., manufactures the K-L timer for Ford cars and trucks, which is constructed to a different principle than the standard timer, and is used mostly for replacement. The timer is claimed to be a decided improvement. The shell

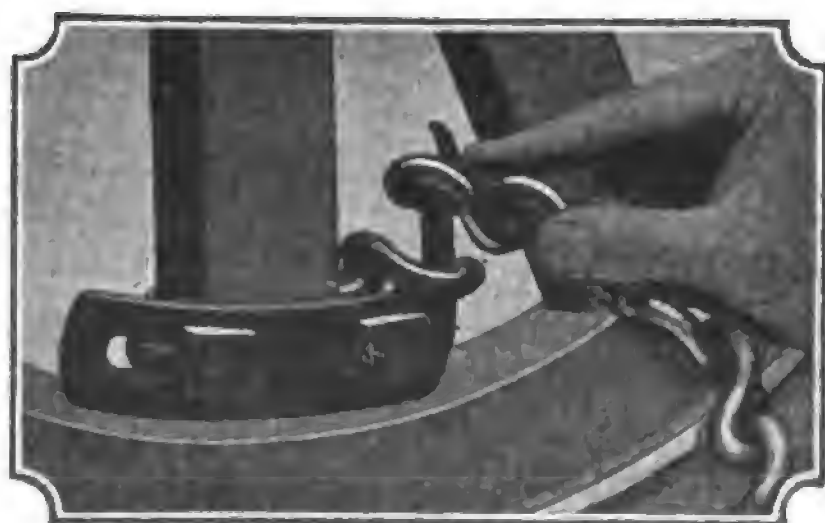


is made of metal, having the wire terminal posts insulated from it by large fiber washers. Flat springs are employed for the make and break, while the contact points are of large size, insuring long life. It is stated that wear is reduced to a minimum in the K-L timer and the manufacturer is willing to guarantee it for 20,000 miles.

NON-SKID CHAIN FOR TRUCKS.

The Parker-Morse Co., Cincinnati, O., is producing a new anti-skid device for trucks for which distinctive qualities are claimed. It may be quickly and easily installed in an emergency and will prevent the wheels slipping, at the same time giving added traction in mud or slippery traveling.

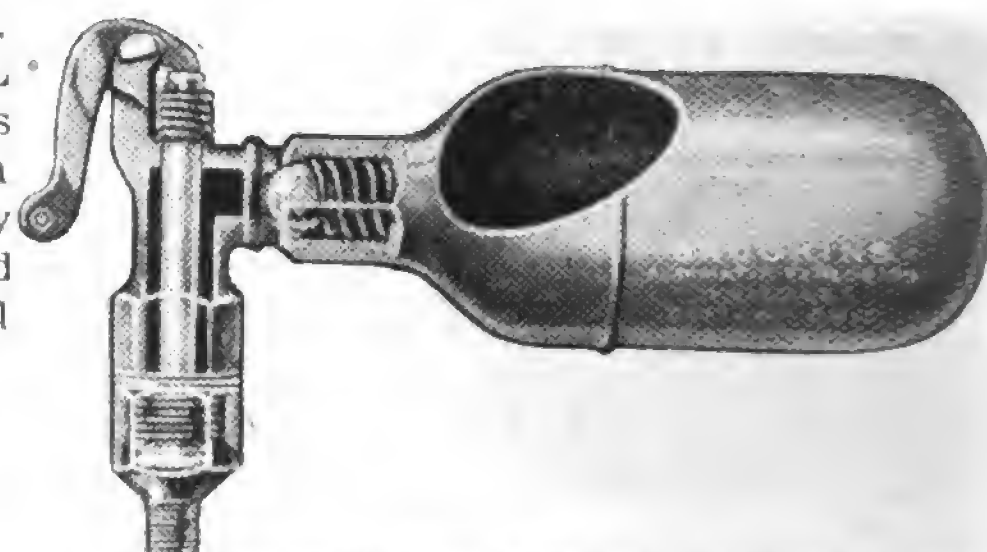
The units of the device are drop forged and are adjustable to the spokes



in both directions. Only two sizes are required to fit all spokes of trucks from one to seven tons capacity. There are hooks on the outer edges of the castings to which the cross chains are attached,

BROOKINS AUTOMATIC EXPLOSION WHISTLE.

The Brookins Manufacturing Co., Dayton, O., manufactures an explosion whistle for use on truck engines that is claimed to be unexcelled.



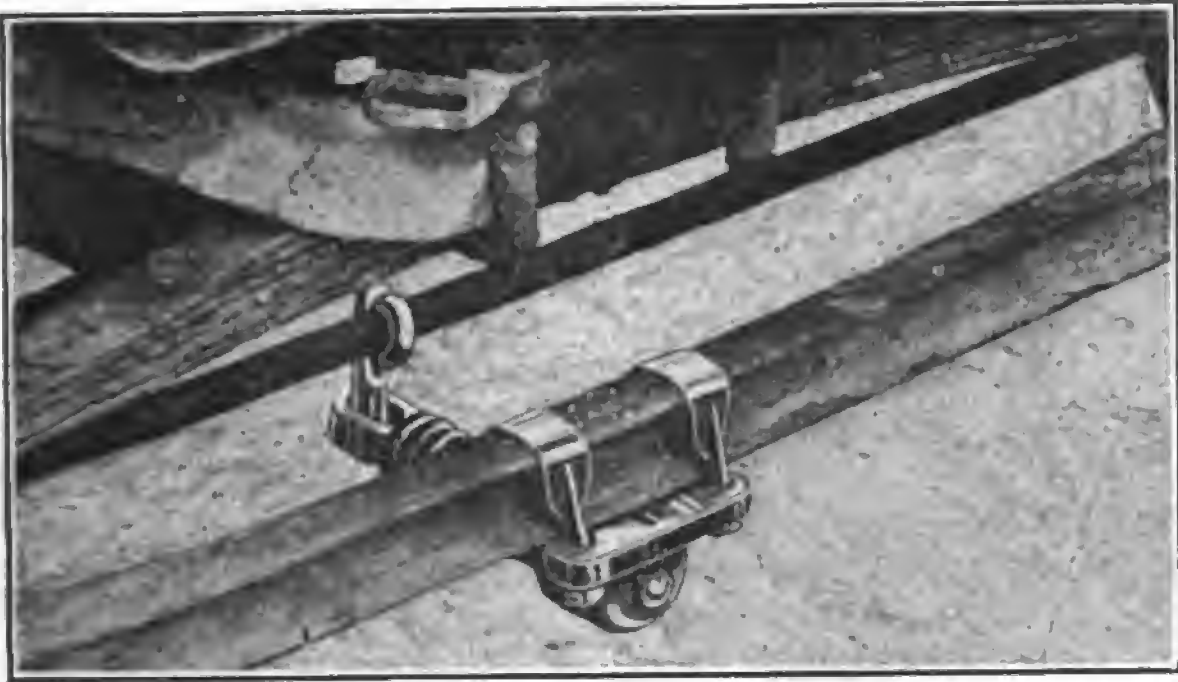
The whistle has several qualities not found in other whistles of this type, one of which is a ball and check valve which holds its seat against normal compression of about 60 pounds in the cylinder. This valve automatically opens when an explosion pressure of approximately 250 pounds is developed in the cylinder, releasing the full explosion pressure to the whistle. Instantly and automatically this valve closes and prevents air being drawn into the cylinder on the intake stroke, which insures against the mixture being diluted.

CHISEL AND PUNCH SET NO. 169.

Smith & Heminway Co., Inc., Irvington, N. J., manufacture Red Devil Chisel and Punch Sets, No. 169, which are designed for service station and machine shop repairers. The tools are made of octagonal

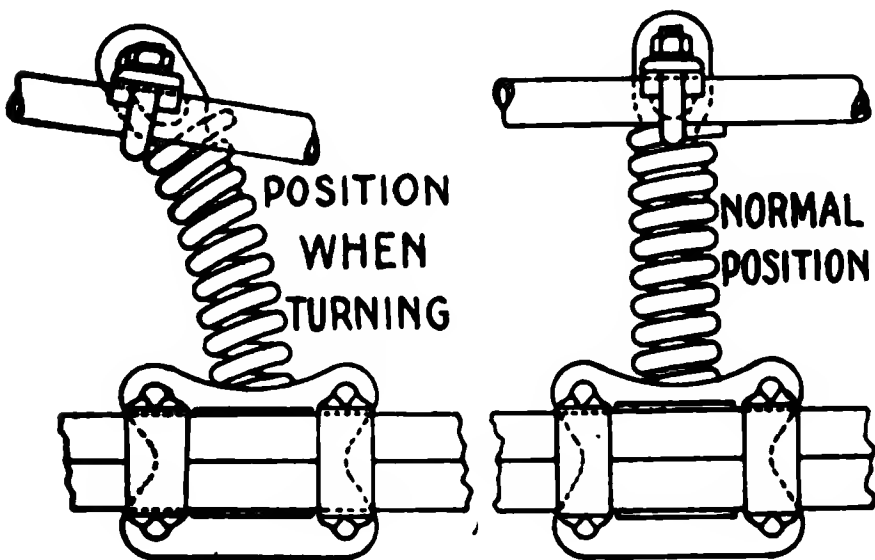


stock, Swedish analysis, 80 point carbon steel and are packed in khaki pocket size cases. The outfit consists of 12 tools each, five inches in length, as follows: Two cold chisels, two cape chisels, two machinist's pin punches, two solid punches, one-half cape chisel, one round-nose chisel, one diamond point chisel and one center punch.



SAFETY STEERING DEVICE FOR FORD TRUCKS.

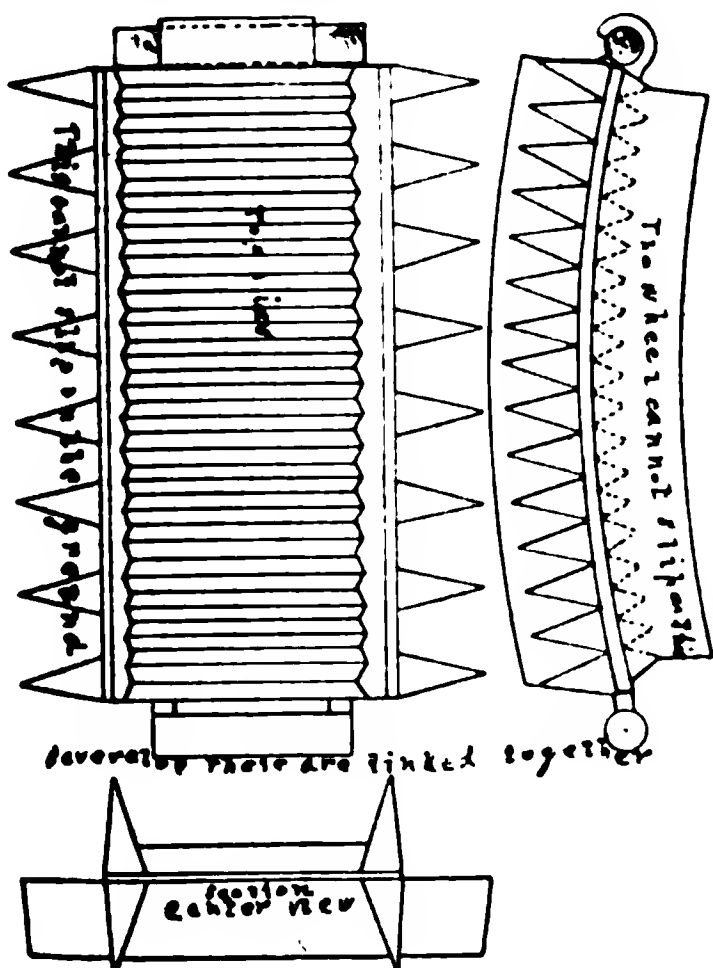
The Green Sales Corporation, 99 State street, Boston, Mass., manufactures a safety steering device for Ford trucks or cars known as the D. & O. It is of simple



construction, can be easily attached in a few minutes, and when installed will, it is claimed, keep the front wheels of the vehicle constantly in alignment. The device greatly increases the driver's control and minimizes the dangers incidental to road driving.

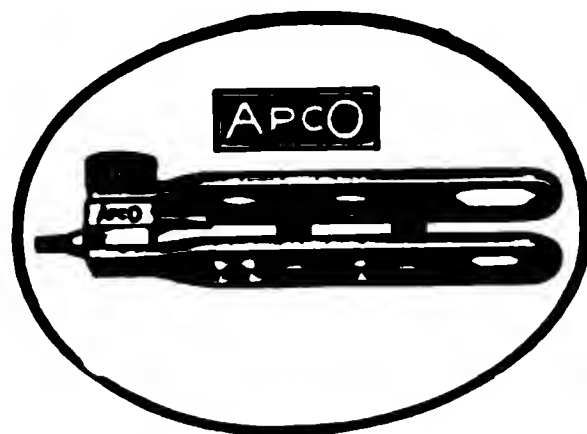
LESLIE TRACK TRACTOR.

A. M. Leslie, 833 Arbury avenue, Evanston, Ill., builds Track Tractors, which are designed primarily for use with truck tires, but may be used with equal satisfaction with passenger car pneumatic tires. The device affords positive traction for trucks driven on soft or wet ground. It is made in sections, which may be fastened end to end and slipped over the entire tire, or it may be used in sections, to use to prevent skidding. Positive grips are fitted, both inside and out, which prevent the tire slipping, and afford positive traction.



NEW APCO TIRE VALVE TOOL.

The Apco Manufacturing Co., Providence, R. I., is now producing a new tool for pneumatic tire valves that is very useful for garage and service station repairers. It includes a tap for the inside of the valve, a die for the outside threads for the valve cap, a die for the outside

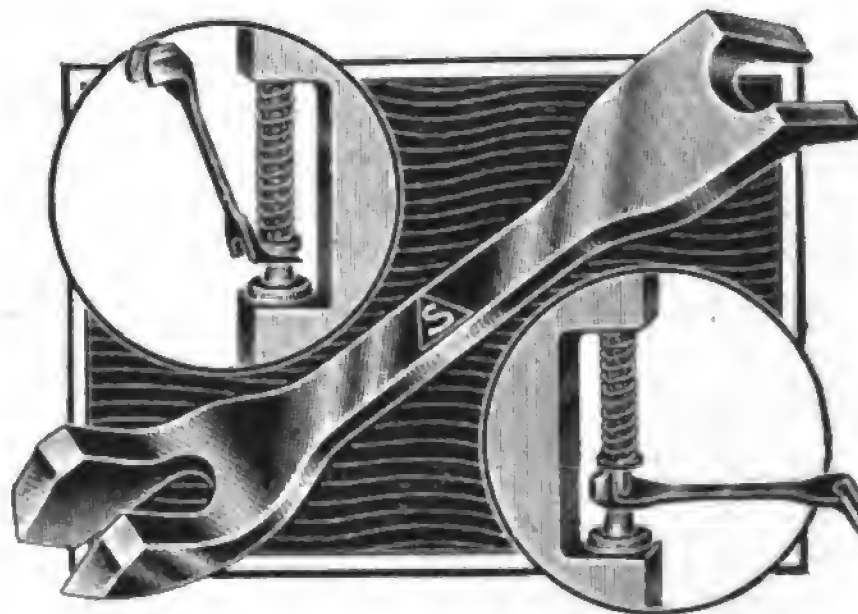


threads that retain the dust cap and lock nut, a wrench for the nut holding the valve in the tube and a wrench for the lock nut which holds the valve to the rim. The tap is tapering, so that a badly bent valve stem can be easily repaired, while both dies have guides which prevent cross threading.

STEVENS VALVE LIFTER.

Stevens & Co., 375 Broadway, New York city, is marketing a new valve lifter for Ford engines which is simply constructed and has qualities found only in more complicated tools, combining much that is desirable in a single tool.

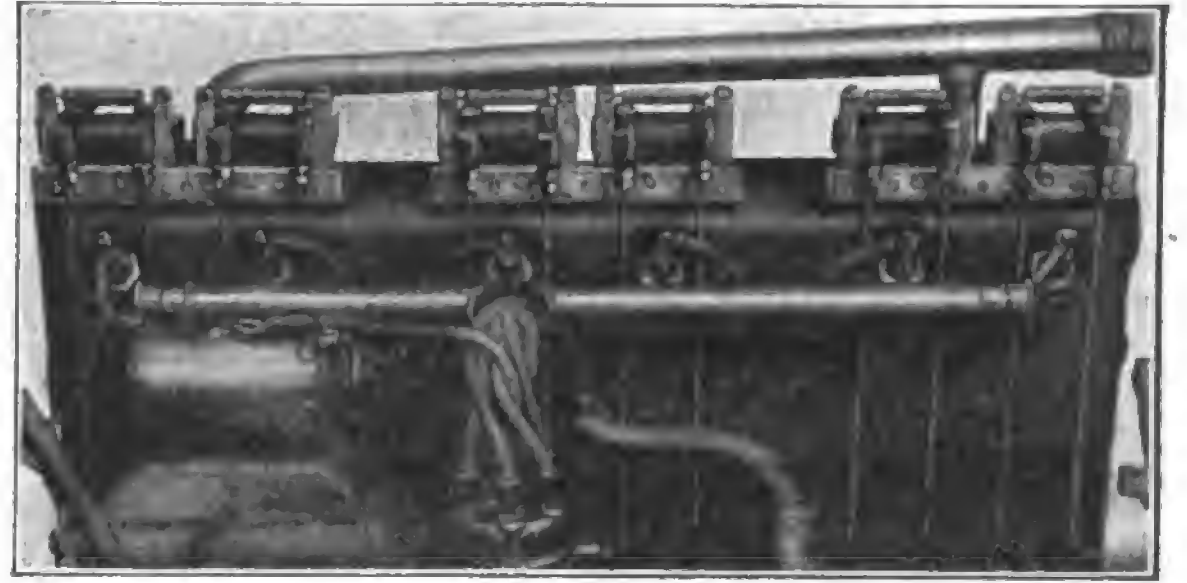
One end of the tool is designed to lift



the valve cap and spring, and the other end will hold the spring under tension, while the valve is removed, ground and the retaining pin replaced. This tool is of interest to repairers and especially those making a specialty of repairing Ford engines.

VALVE SILENCER FOR OVERHEAD VALVES.

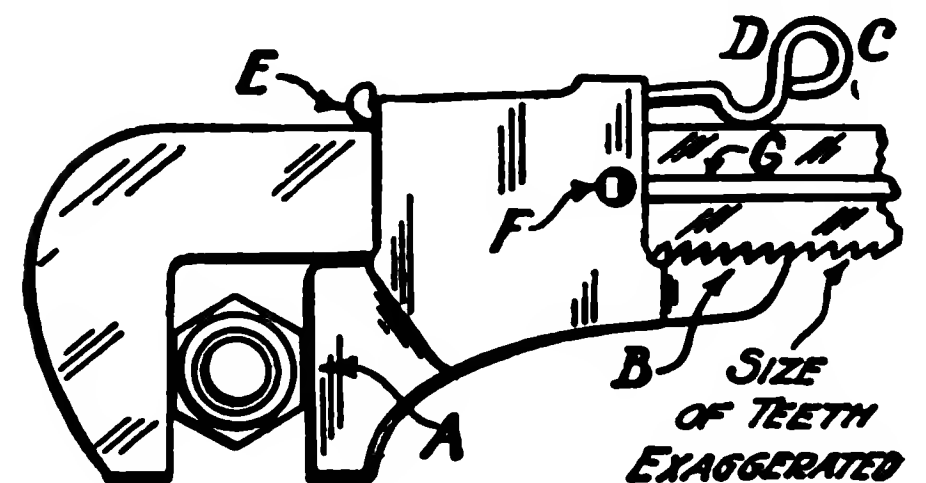
The Newton Manufacturing Co., Plainville, Conn., is manufacturing a new type



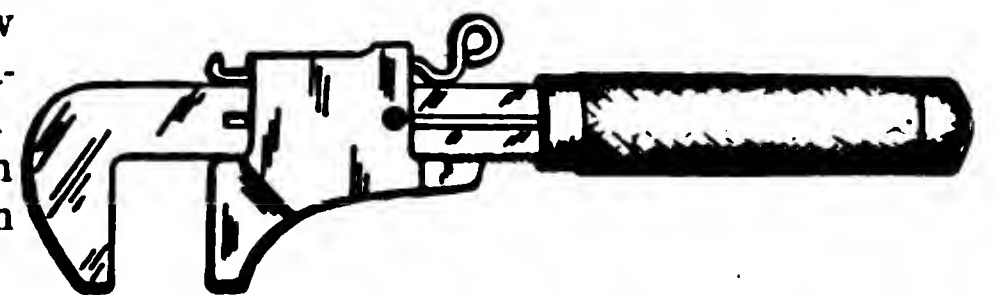
of valve silencer for overhead valve engines, which it claims will cause the rocker arms and the push rod mechanism of overhead valves to operate quietly. The device is fitted to the cylinder block and bears against a side of the rocker arm, tension being supplied by a coil spring across the top of the arm, fastened at the ends.

LIGHTNING ADJUSTABLE WRENCH.

The Lightning Wrench Co., Denver, Col., manufactures a patent jaw wrench that embodies a new principle. Instead of the usual knurled nut and threaded



shank, one edge of the shank and the movable jaw are notched and the jaw is spring retained. The wrench is claimed to be very easy to operate, and the jaws



in any position are positively held. Releasing the spring at the back releases the jaw, allowing it to slide either forward or back as desired.

UNIVERSAL FIVE-IN-ONE VALVE TOOL NO. 3263.

A. Schrader's Son, Inc., Brooklyn, N. Y., is now producing a new valve tool which has such quality it should be in the



kit of every repairer. As its name implies, it combines five different tools in one and may be used to good advantage in repairing, rethreading, straightening, etc., the various units of tire valves.

ODDS AND ENDS OF TRADE NEWS

MANUFACTURERS CONFER.

The Motor Truck Manufacturers' association discussed credits, uniform vehicle laws and other matters affecting the industry at a meeting in Chicago early this month. Ten members were admitted, increasing the membership to 28. The officers are: President, B. A. Gramm of the Gramm-Bernstein Motor Truck Co.; vice presidents, J. W. Stephenson of the Indiana Truck Corporation and Frank Luick of the Sterling Motor Truck Co.; secretary-treasurer, Moe Cook of the Service Motor Truck Co. The directors, in addition to the officers, are R. C. Stewart of the United States Motor Co.; S. A. Cook of the Diamond T Motor Car Co. and J. D. Potter, American Motor Truck Co.

ACME FINANCING.

Acme Motor Truck Co., Cadillac, Mich., has increased its dividend rate from 7 to 10 per cent., applicable to the present \$600,000 of common stock for the last half of 1920. The balance of the common, \$150,000, is being offered to present stockholders at \$20 a share. This stock can be bought on the installment plan as the company's present finances capably care for its operations. The new stock will not be issued until Nov. 15, 1921, and will not be subject to dividends until that time. The par value is \$10 and the book value \$19.72.

NEW N. A. C. C. MEMBERS.

Companies recently affiliated with the National Automobile Chamber of Commerce, Inc., include the Rainier Motors Corporation, Flushing, L. I.; the American Motor Truck Co., Newark, O., and the Kentucky Wagon Manufacturing Co., Louisville, Ky.

HUB STANDARDIZATION.

The Automotive Metal Wheel association met at Niagara Falls, Aug. 10, and discussed brief standardization. It was agreed that a proposed standard for front wheel spindles at last should be submitted at the next meeting to be held at the Union League club, Chicago, Oct. 12.

STONE TO DIRECT MERRY GARDEN SALES.

The Atlantic Machine & Manufacturing Co., Cleveland, O., manufacturer of the Merry Garden tractor, has appointed Charles D. Stone as sales manager, succeeding E. S. Cohen, who resigned to engage in the foundry business.

HANDLES ONEIDA ADVERTISING.

Lord & Thomas, Mellers building, New York city, has signed to look after the advertising of the Oneida Motor Truck Co., Green Bay, Wis. Read L. Parker will give his personal attention to the account.

A MODEL TRUCK DRIVER?

With some few exceptions a truck driver held up by an automobile inspector on the Baltimore Pike, Pennsylvania, was perfectly within the law. This machine had no lenses at all in front. It had no tail lamp. Although the construction of the vehicle prevented the operator from having a sufficient view of the traffic in the rear, this machine had no mirror. There was no license tag in the rear, and a badly smudged tag hanging loosely in front of the machine was found to be a passenger car license. The driver did not have his registration card. When he was stopped he was travelling approximately 30 miles an hour—10 miles in excess of the speed limit for any truck. Naturally he was given a heavy fine and costs by a nearby justice of peace.

BETTER NEW ZEALAND ROADS.

New Zealand is doing considerable road building and it seems that an opening is offered for American road machinery. One county council recently authorized the purchase of three motor trucks, two complete stone crushing plants, plows, scarifiers and other machinery necessary for the building of stone roads.

GOOD ROADS FOR MEXICO.

Mexico is to have modern all year highways, President de la Huerta planning to connect the principal cities by these avenues of communication. The first step will be the building of a 400-mile road of broken rock, with concrete surface, from Mexico City to Guadalajara, bids for which have already been advertised.

DUPLEX AT SWITCH ENGINE.

A Duplex four-wheel truck owned by E. L. Howard Y Cia, Mexico City, has recently given excellent satisfaction in hauling freight cars and acting in the capacity of a switch engine. Six empty box cars were pulled and later nine. One of these trucks also hauled five freight cars, each loaded with flour.

MORE GARFORD CAPACITY.

The Garford Motor Truck Co., Lima, O., will be able to double its production almost immediately following the completion of its new chassis assembling plant. Garford sales for the first quarter show an increase of 313 per cent. over the business in the same period of 1919.

NEW HURLBURT PETITION.

A new petition in bankruptcy has been filed against Hurlburt Motors, Inc., New York city. They are three petitioners, representing claims of about \$41,000. Hurlburt Motors, Inc., is headed by William B. Hurlburt, organizer of the Hurlburt Motor Truck Co.

FINE RUN BY DUPLEX.

A Duplex Limited truck has just completed a run from Hartford, Conn., to Lansing, Mich., and return, the round trip being made between Tuesday noon and early Saturday afternoon. Not a nut or bolt on the truck was touched during the journey, the changing of one tire being the only untoward incident. The gasoline average was nearly 10 miles per gallon. Three tons of rims and bearings were carried to Lansing and the return load totaled 5200 pounds. The Duplex limited reached Hartford 15 minutes ahead of several trucks which left Lansing a day earlier. The run was made for Russell P. Taber, Inc., Duplex dealer in the Hartford territory.

DIAMOND T CONVENTION.

The annual distributors' and dealers' convention of the Diamond T Motor Car Co. in Chicago recently was attended by 120 representatives, practically every state in the union having delegates and the Pacific coast making a strong showing. The motor truck was emphasized as an essential to national progress and development in addresses by A. R. Krch of the Goodyear Tire & Rubber Co., W. S. Bacon of the Oliver Chilled Plow Co. and D. H. Merrick of the Great Lakes Trust Co.

HANDLING MACKS IN TEXAS.

Jones Motor Co., recently organized at Houston, Tex., with \$50,000 capital, has taken over the South Texas Truck Co. and will distribute Mack trucks and Holt caterpillar tractors in southern Texas. The organizers are Jesse H. Jones, M. Tilford Jones and C. G. Moffatt.

DUPLEX HOME IN BOSTON.

The Harper-Libby Co., Boston, distributor for Duplex trucks, is now installed in a new and modern building at 801 Beacon street. The officers of this organization are: President, William Harper, Jr.; vice president, W. G. Burns; treasurer, H. A. Libby.

DODGE LAW WITH PNEUMATICS.

The proposed law in Ontario which is intended to limit the load of trucks to one-half their rated capacities during March and April, will not apply to pneumatic tired trucks. It will affect only provincial highways and not cities and towns.

PACKARD SERVICE STATION.

The Packard Motor Car Co. has opened a new four-story service building on Jefferson avenue, Detroit, for trucks. W. T. Bush, former central district sales manager, who succeeds Oscar Cullocan as general manager of the branch, will be in charge.

LATE INDUSTRIAL HAPPENINGS

MIDWEST WORKERS BUY STOCK.

President John A. Wood of the Midwest Engine Co., Indianapolis, Ind., announces that employees have purchased \$128,000 worth of the company's preferred stock, more than one-third of the workers becoming financially interested in the organization. The company recently increased its capital stock to \$8,000,000, of which Carl Fisher and James Allison of the Prest-O-Lite Co. and officials of the Indianapolis Motor Speedway each took a \$1,000,000 block.

The new financing allows the concerns to bring about the mammoth expansion the business warrants. The production of Utilitor tractors, truck and tractor engines and marine and pump equipment will be substantially increased.

GMC AFTER TIMBER LAND.

The General Motors Corporation is reported to be negotiating for large tracts of timber land around Norway, Mich., in the heart of the hardwood belt of northern Wisconsin and upper Michigan as a source for its supply of all wood and wood stocks. The prospective holdings include water power site and lands containing iron ore, in addition to the vast areas of timber. The Ford Motor Co., Detroit, is carrying out a similar project at Ironwood, Mich.

FREIGHT RATES UP IN CANADA.

Because failure to do so might precipitate a general railway strike in that country, the Canadian Railway association has decided to recommend to Canadian railways the adoption of the wage schedule awarded by the United States Railroad Labor Board, with an accompanying rise in rates.

N. A. C. C. MAIL ADDRESS.

Now that the National Automobile Chamber of Commerce, Inc., is safely ensconced in its new headquarters in the Marlin-Rockwell building, mail should be addressed to "366 Madison avenue at 46th street, New York." The telephone number remains the same, Murray Hill, 5804.

DELIVER PARKERS IN EAST.

The Wilson & Vevara Corporation, New York city, which is to distribute Parker trucks in eight eastern states, began to make deliveries Aug. 1. Dealers are being rapidly established in leading cities.

WARSAW SAVED BY TRUCKS.

Double-deck automobile buses hauled troops to the front at the hour of Warsaw's peril this month and saved the city, according to the Associated Press. The soldiers they carried were thrown into the foremost ranks and quickly stemmed the onrushing tide of Russians.

HEBNER PRESIDENT OF BEARINGS SERVICE CO.

Alfred H. Hebner, general manager of the Bearings Service Co., Detroit, Mich., which acts as a service department for the Timken Roller Bearing Co., the Hyatt Roller Bearing Co., and the New Departure Manufacturing Co., and which has 33 branches and 1000 distributors, has also been elected president. Sales Manager Dana H. Torrey has been named secretary and treasurer. W. J. St. Onge, formerly with the Wire Wheel Corporation, succeeds Mr. Torrey.

TRUCKS AID STEEL INDUSTRY.

The steel plants at Youngstown, O., with storehouses filled, would long since have been forced to suspend operations were it not for the use of trucks to relieve the situation. A number of trucks from Akron, where conditions are not so active, were recently added to the Youngstown equipment. On one day 97 motor trucks were awaiting their turn to load at a certain department of one of the steel mills. At another establishment 50 trucks were standing in line.

TRAILER MEN COOPERATE.

Chicago representatives of trailer manufacturers are holding monthly get-together meetings at which the interests of the industry are advanced and plans made to combat whatever is inimical to those interests. One of the targets now under fire is an ordinance in Evanston, Ind., which prohibits the use of trailers.

JORGENSEN ADDITION.

Jorgenson Manufacturing Co., Wau-paca, Wis., manufacturer of priming devices and other gas engine parts and specialties, is building the first of a series of plant additions following a recent increase in capitalization from \$75,000 to \$250,000.

TRAILER LAW IN NEW YORK.

The Trailer Manufacturers' association has asked the New York secretary of state for a ruling on the Ferris law relating to trucks and trailers.

In reply to its request for a definition of the law, Secretary Hugo wrote:

"I have to advise that 800 pounds per inch in width of tire will be taken as the limiting factor for the weight of the trailer."

This is taken to mean that the semi-trailer combination with load may weigh more than 25,000 pounds so long as the truck or tractor alone, plus its rated carrying capacity, does not exceed 25,000 pounds and the weight on the trailer wheels is not more than 800 pounds per inch of tire width.

MICHIGAN TO NEW YORK BY TRUCK.

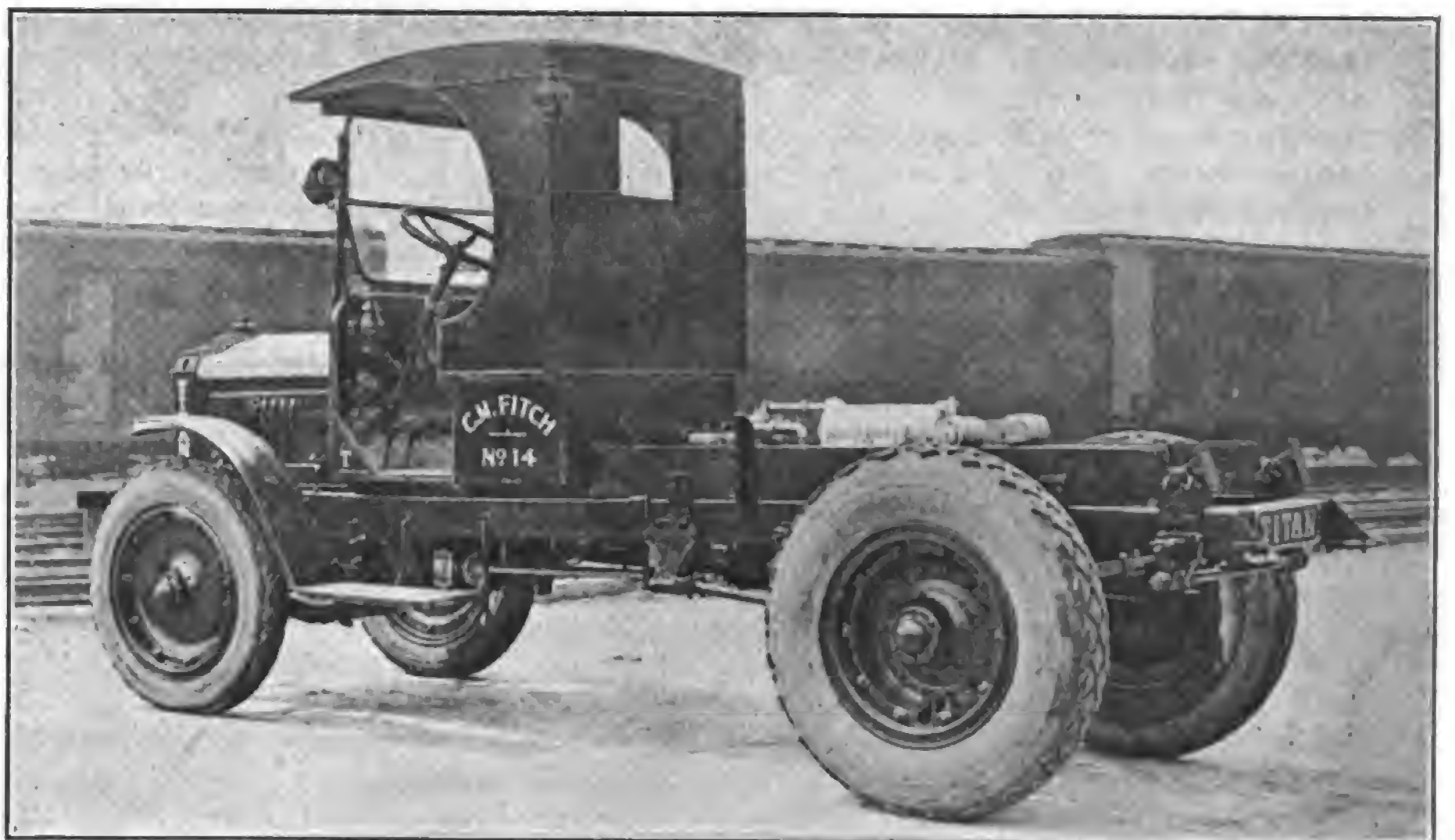
Two steam turbines at the plant of the General Motors Truck Co., Pontiac, Mich., needed replacements and it was necessary to send the turbines to Wells-ville, N. Y., to have the job done. A two-ton GMC truck carried the turbines to their destination and back in jig time. They made the round trip quicker than they could have gone one way by any other method of transportation.

75,400 TRUCKS IN OHIO.

Up to June 9 a total of 75,000 gasoline and 400 electric trucks had been registered in Ohio. City, county and state trucks are not included in this list, however. It is estimated that the Ohio registration for the year will reach the 95,000 mark.

LONDON TRUCK SHOW OCT. 15.

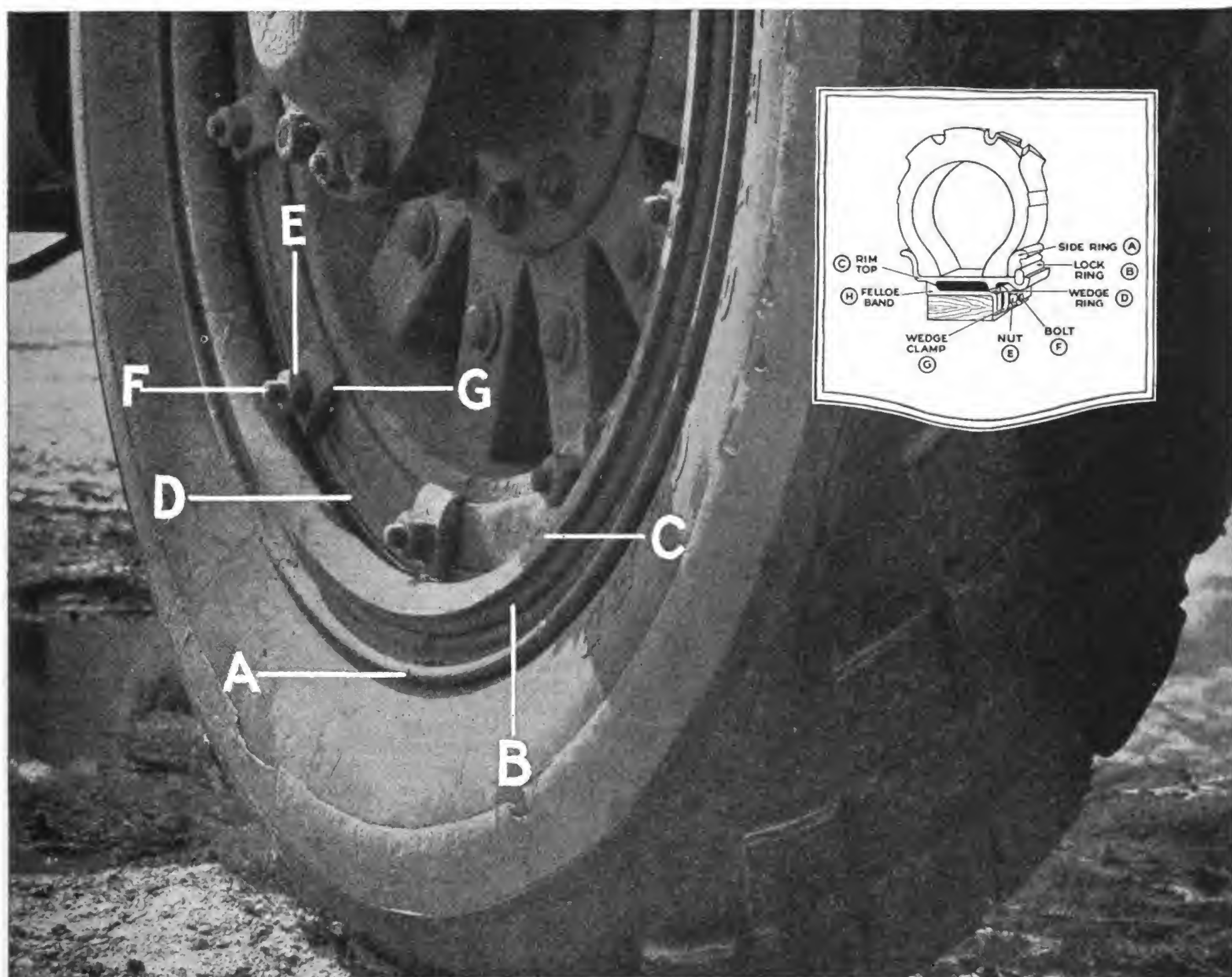
The Commercial Car show at the Olympia, London, has been fixed for Oct. 15-23. It is the first exclusive truck show held in England in seven years and promises to be highly successful.



A Titan Internal Gear Driven Short Wheelbase Tractor with Full Equipment. A Standard Production with Pneumatic Tires for Heavy Duty.

COMING EVENTS

- August 11 and 12—Tractor Demonstration, Spartanburg, S. C.
- August 20 to 28—Springfield, Ill., 68th Annual State Fair. Passenger Cars, Trucks, Tractors. B. M. Davis, secretary.
- August 23 to 28—Erie, Pa., Fifth Annual Erie Exposition. Passenger Cars, Trucks, Tractors. C. R. Cummins, Secretary.
- Aug. 23-27—Bangor, Me., Eastern Maine Fair Association.
- August 23 to 28—Stillwater, Okla., Oklahoma Farm Power Show. Direction State Board of Agriculture.
- August 28 to September 4—Sherbrooke, Quebec, 36th Annual Great Eastern Exposition. Passenger Cars, Trucks, Tractors. Sidney E. Francis, Secretary.
- August 28 to September 4—Milwaukee, Wis., 55th Annual State Fair. Passenger Cars, Trucks, Tractors. Oliver E. Remey, Secretary.
- August 28 to September 11—Toronto, Ontario. Forty-second Annual Canadian National Exhibition, Passenger Cars, Trucks, Tractors, Accessories. John G. Kent, Manager.
- August 29 to September 4—Danville, Ill., Fourth Annual Eastern Illinois and Western Indiana Fair. Passenger Cars, Trucks, Tractors, Trailers, Light Plants, Farm Machinery. George M. McGray, secretary.
- August 30 to September 3—Waterville, Me., Central Maine Fair.
- August 30 to September 4—Columbus, O., Seventh Annual State Fair. Passenger Cars, Trucks, Tractors. Columbus Auto Show Co. manager.
- September 1 and 2—Tractor Trials, Satigny, Switzerland.
- Sept. 1 to 3—Chicago, Ill., 13th Annual Convention National Gas Engine Association.
- September 2 to 11—Quebec, Québec Provincial Exposition. Passenger Cars, Trucks, Tractors. George Morisset, secretary.
- September 4 to 7—Tractor Trials, Burgos, Spain.
- September 4 to 11—Hamlin, Minn., 61st Annual Fair. Passenger Cars, Trucks, Tractors. Thomas H. Canfield, secretary.
- September 5 to 10—Lincoln, Neb., 52nd Annual State Fair. Passenger Cars, Trucks, Tractors. E. R. Danielson, secretary.
- September 6 to 11—Indianapolis, Ind., 64th Annual Fall Auto Show at Indianapolis State Fair. Passenger Cars, Trucks, Accessories only. John B. Orman, manager.
- September 6 to 11—Rochester, N. Y., 13th Annual Exposition. Passenger Cars, Trucks, Tractors. Edgar F. Edwards, secretary.
- September 6 to 11—Spokane, Wash., 27th Annual Interstate Fair. Passenger Cars, Trucks, Tractors. W. L. Tenant, secretary.
- September 6 to 11—Wheeling, W. Va., Fortieth Annual State Fair. Passenger Cars, Trucks, Tractors. Bert H. Swartz, secretary.
- September 7 to 10—Presque Island, Me., Northern Maine Fair Association.
- September 11 to 18—Lindon, Ontario, 53rd Annual Fair, Western Fair Association. Passenger Cars, Trucks, Tractors. A. M. Hunt, secretary.
- September 11 to 18—Louisville, Ky., 80th Annual State Fair. Passenger Cars, Trucks, Tractors. J. Dan Ackerman, Jr., secretary.
- September 11 to 18—Vancouver, B. C., Canada, 11th Annual Vancouver Exhibition. Passenger Cars, Trucks, Tractors. H. S. Ralston, secretary.
- September 13 to 14—Huron, S. D., 36th Annual State Fair. Passenger Cars, Trucks, Tractors. C. N. McIlvaine, secretary.
- September 13 to 18—Syracuse, N. Y., 18th Annual State Fair. Passenger Cars, Trucks, Tractors. J. Dan Ackerman, Jr., secretary.
- September 14-17—Lewiston, Me., Maine State Agricultural Fair.
- September 14 to 17—Douglas, Wyo., 16th Annual State Fair. Passenger Cars, Trucks, Tractors. E. Ewel, secretary.
- September 17 to 25—Peoria, Ill., 10th Annual National Implement and Vehicle Show. Passenger Cars, Trucks, Tractors. George H. Emory, secretary.
- September 19 to 25—Sioux City, Iowa, 18th Annual Interstate Fair. Passenger Cars, Trucks, Tractors. Motor Trades Bureau, Sioux City, managers.
- September 20 to 25—Los Angeles, Cal., National Tractor Show of the West, Tractor and Implement Dealers' Association of Southern California. Guy H. Hall, Manager.
- September 21 to 24—Billings, Mont., Fifth Midland Empire Fair. Passenger Cars, Trucks, Tractors. F. M. Lawrence, secretary.
- September 21 to 24—La Crosse, Wis., 29th Annual Interstate Fair. Passenger Cars, Trucks, Tractors. C. S. Van Auken, secretary.
- September 25 to October 2—Memphis, Tenn., 13th Annual Tri-State Fair. Passenger Cars, Trucks, Tractors. D. Fuller, secretary.
- September 25 to October 2—Oklahoma City, Okla., 14th Annual State Fair and Exposition. Passenger Cars, Trucks, Tractors. R. T. Hemphill, secretary.
- September 27 to October 1—Trenton, N. J., 33rd Annual Interstate Fair. Passenger Cars, Trucks, Tractors. M. R. Margerum, secretary.
- September 27 to October 2—Salem, Ore., 59th Annual State Fair. Passenger Cars, Trucks, Tractors. A. H. Lea, Sec.
- September 28 to October 1—White River Junction, Vt., 14th Annual State Fair. Passenger Cars, Trucks, Tractors. F. L. Davis, secretary.
- October 1 to 6—Tractor Trials, Paris, France.
- October 2 to 9—Chattanooga, Tenn., Fourth Annual Interstate Fair. Passenger Cars, Trucks, Tractors. J. R. Curtis, secretary.
- October 4 to 9—Salt Lake City, Utah, 42nd Annual State Fair. Passenger Cars, Trucks, Tractors. D. W. Parratt, manager.
- October 4 to 9—Muskogee, Okla., Fifth Annual State Fair. Passenger Cars, Trucks, Tractors. Miss Ethel Murray Simonds, secretary.
- October 4 to 14—Richmond, Va., 15th Annual State Fair. Passenger Cars, Trucks, Tractors. W. C. Saunders, secretary.
- October 6 to 9—Northampton, Mass., Annual Automobile Show, H. F. of H. Agricultural Society, Three-County Fair Grounds. A. J. Morse, secretary.
- October 6 to 16—New York, New York Electrical Exposition, Three Floors, Grand Central Palace, includes Electric Passenger Cars, Trucks, Industrial Trucks, Batteries. George F. Parker, manager.
- October 9 to 24—Dallas, Tex., 34th Annual State Fair. Passenger Cars, Trucks, Tractors, Accessories. W. H. Stratton, secretary.
- October 11 to 16—Meridian, Miss., 10th Annual Mississippi-Alabama Fair. Passenger Cars, Trucks, Tractors. A. H. George, secretary.
- Oct. 12 to 14—Sherman Hotel, Chicago, Ill., National Federation of Implement and Vehicle Dealers' association. H. J. Hodge, Secretary, Abilene, Kan.
- October 13 to 15—Atlantic City, N. J., National Implement & Vehicle Association.
- October 16 to 26—Atlanta, Ga., Southeastern Fair Association, Fifth Annual Fair. Atlanta Auto Association managers of show, 305 Connolly building.
- October 18 to 23—Jackson, Miss., 17th Annual State Fair. Passenger Cars, Trucks, Tractors. Mabel L. Stire, secretary.
- October 18 to 23—Raleigh, N. C., 59th Annual State Fair. Passenger Cars, Trucks, Tractors. Joseph E. Pogue, secretary.
- Oct. 20 to 22—Atlantic City, N. J., National Implement & Vehicle Association 27th Annual Convention.
- October 28 to November 6—Macon, Ga., 65th Annual State Fair. Passenger Cars, Trucks, Tractors. Harry C. Roberts, secretary.
- October 30 to November 14—Waco, Tex., 11th Annual Cotton Palace Exposition. Passenger Cars, Trucks, Tractors. S. N. Mayfield, secretary.
- November 15 to 20—Chicago, Ill., Annual Show Automotive Equipment Association, Coliseum. A. B. Kaufmann, manager.
- November 17 to 18—Ohio Implement Dealers' Association.
- November and December—Buenos Aires, Brazil, National Exposition of U. S. Manufacturers.
- December 1 to 3—Indiana Implement Dealers' Association.
- December 6 to 9—Iowa Implement Dealers' Association.
- December 7 to 10—Wisconsin Implement Dealers' Association.
- December 7 to 10—Michigan Implement Dealers' Association.
- December 14 to 16—Illinois Implement Dealers' Association.



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For Every Truck, Rims That Lock and Unlock Easily

MANY virtues in the straight side type of rim, as pioneered by Goodyear, are the result of the same engineering thought and effort that pioneered the straight side type of tire.

So sound was the original Goodyear rim design, in its simplicity, strength, ease of operation, that certain of its characteristics have been retained in present-day straight side rims.

However, in addition to these desirable features, the present Goodyear Rim retains also and exclusively the original oval lock ring. This makes engagement and release extremely easy.

This oval lock ring combines ease of operation with rigidity; it is the result of that constant endeavor to improve which protects our good name.

Because the Goodyear Rim is made for every truck need, in all sizes, and in demountable and detachable types, it is apparent why motor truck manufacturers have given it substantial recognition.

Further information about these easily operated Goodyear Truck Rims can be obtained by writing direct to The Goodyear Tire & Rubber Company, Akron, Ohio, or Los Angeles, California.

GOODYEAR

TRUCK RIMS

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

GENERALITIES OF THE INDUSTRY

U. S. FUEL INVESTIGATION.

The National Automobile Chamber of Commerce has offered to the U. S. Bureau of Standards the following suggested program for its investigation into the possibility of blended fuels and a search for substitute fuels:

(a) Securing of greater economy in the use of present commercial gasoline in present equipment without appreciable sacrifice of power, acceleration and general performance.

(b) Investigation into the possibility of a wider use of blended and substitute fuels which will make commercially available in increasing amounts other fuels such as benzol, alcohol, etc., and possibly of less volatile petroleum products to home extent, thus increasing the total available fuel.

(c) An educational campaign coupled with any practicable restrictive measures to check the growing adoption of fuel oil as fuel where coal can be used.

(d) The ultimate development of more economical transportation through a study of the mechanics of vehicles, elimination of excessive mechanical losses, possible reduction in weight, and a training of users, particularly users of business vehicles, to accept a less exacting standard of performance.

(e) The ultimate development of power plants having higher thermal efficiency and less exacting demands as to quality of fuel.

As special problems under this general head might be included—"Automobile and Truck Performance," "Carburetor Design," "Combustion of Hydrocarbon Fuels at High Pressure," "Solid and Pneumatic Tires," "Manifolds," "Fuel Savers," "Fuel Improvers," etc. A study of lubricating oils, greases, etc., would also be of value.

SOUTH AMERICA NEEDS TRUCKS.

Venezuela and Colombia offer a splendid field for both truck and tractor, according to a recent bulletin of the U. S. Bureau of Foreign and Domestic Commerce. The increased demand is already in evidence, as shown by the fact that trucks shipped to Venezuela in the first four months of 1920 doubled the entire 1919 export, while in the same period more trucks were sent Colombia than throughout 1919. Buses are being introduced in considerable number. American makes of trucks dominate these fields.

SELLING BRITISH ARMY TRUCKS.

British army motor trucks at Saloniki are being sold and will probably glut the market in Greece and the Near East for several years. Two thousand three-ton trucks, some of American make, were sold. The London Levant Co. controlled 1350 of these purchases. Serbia bought 450. Greece is due to get 200. There is still a field in this section for light weight American trucks and for cars.

HOW TRANSPORTATION COST INFLUENCES EXPENSES OF EVERY PERSON

The manner in which transportation affects the high cost of living is effectively brought out in an article by Rolfe C. Spinning, advertising manager of the Service Motor Truck Co., Wabash, Ind., which appeared in a recent issue of "Outlook."

Mr. Spinning says in part:

"Civilization is the result of nothing more than distribution; distribution of ideas, goods and all manner of commodities.

"The individual of today is not self-sustaining.

"The population of our cities could live but a few days, once communication with the outside world was stopped.

"All the goods manufactured in this country, all the foodstuffs raised on our farms, must—in some manner—be distributed to the ultimate consumer, and the more direct the route the lower the price; for next to the item of labor, transportation is the biggest factor in the cost of the average manufactured product, be it an automobile or a loaf of bread.

"In the case of the bread, for instance, consider how transportation affects the price you and I must pay. Transportation enters into consideration from the time the ripened wheat is cut. It must be hauled to the thresher, hauled to the mill, hauled to the jobber, hauled to the bakery, hauled to the grocery, hauled to the back door, and your wife tells you that the bread is costing 18 cents a loaf and she cannot see why. Transportation is why!

"The bill we are paying for inefficient means of transportation is astounding, and is one of the reasons for the high prices now being asked."

MILK HAULER'S RECORD.

Julius Serb of Cleveland, who hauls milk 80 miles a day with a five-ton Acme truck, has not missed a trip in 365 days and has never been more than a few hours late. He claims that on several days during the past winter his truck was the only one milk carrier entering Cleveland. Mr. Serb's milk route is 40 miles one way, 24 of the 40 being dirt road, which is in very poor condition several months of the year.

TO BUY FIRE TRUCKS.

The chief of the fire department in a city of Canada is now receiving bids for hose trucks, fuel trucks, automobile fire engines, chemical engine, hose wagon, etc. Information may be secured from the Bureau of Foreign and Domestic Commerce, Washington, D. C., or any district office. The opportunity number is 33,495.

TIRE PRODUCTION TO INCREASE, SAYS SEIBERLING.

President F. S. Seiberling of the Goodyear Tire & Rubber Co. sees no permanent setback for the tire industry in the present acute business situation. Among other things he says:

"No industry in the country has a brighter outlook than the tire industry, notwithstanding the talk of reduced automobile production.

"Eight million cars are now running in this country. Within five years this number will approximate 15,000,000 cars—all with tires—the major part of which must come from Akron. The rubber industry is on a solid foundation, unsurpassed by any industry in this country.

"The business situation is acute at this time while the adjustment to the shock of restricted credits applied by the Federal Reserve banks and the effect of the railroad strike are being made. Within a few months this extreme pressure will have been removed, but the orderly process of deflation of war values will move steadily to an equilibrium. So far as Akron is concerned we have reached bottom in the production of tires. Abnormal stocks over the country are being steadily absorbed and the curve of production within a few months will be steadily upward.

TO TRAIN WELFARE WORKERS.

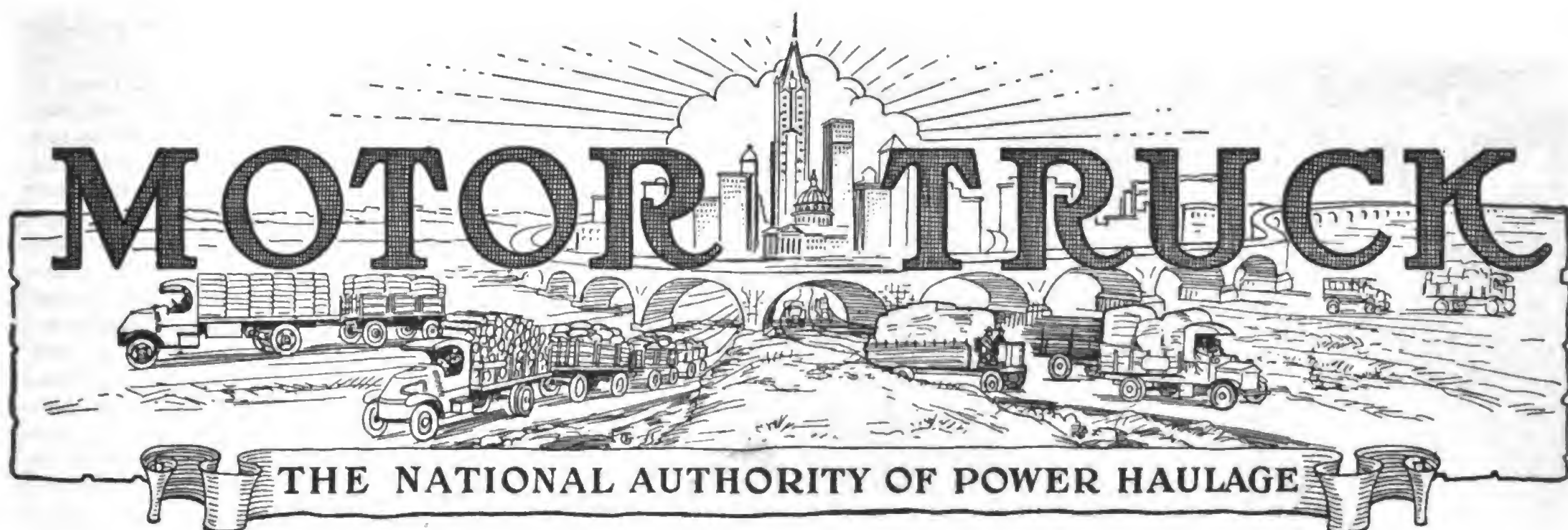
The International Harvester Co., Chicago, which employs 40,000 people, is active in the plan to establish the American Institution of Industry and Commerce, which will train men to promote the welfare of workers, and also turn out personnel and employment managers. Buffalo, Niagara Falls, Pittsburgh and New York city are being considered as sites for the institute, which will be under the direction of the National Association of Corporate Training, which has 154 members, including some of America's leading concerns.

TO MAKE TRUCKS AND TRACTORS.

The Southern Automobile Manufacturing Co., Memphis, Tenn., with \$1,000,000 capital, is fast getting its factory in the manufacturing district of that city ready for production. The company will manufacture, assemble and sell trucks, tractors, automobiles and tire equipment. The officers are: President and general manager, W. A. King; vice president and general counsel, Lovick P. Miles.

TRAILER CARRIES PASSENGERS.

The Beech-Nut Packing Co., Canajoharie, N. Y., has introduced a trailer as a passenger hauler, a truck and pneumatic tired Arcadia trailer bringing 80 employees eight miles to the plant daily. The trailer has a brake which can be operated by the truck driver. It is equipped with removable seats and steps and other comforts.



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PAWTUCKET, R. I.

SEPTEMBER, 1920.

HOW EXPRESSMEN'S LEAGUE SERVES BOSTON BUSINESS MEN

PLAN DEVELOPED BY 40 YEARS' EXPERIENCE,
INSURES RESPONSIBILITY AND STANDARDIZED
RATES WITH INDEPENDENT AND COMPETITIVE
OPERATORS,—A SPLENDID EXAMPLE FOR NA-
TIONAL ORGANIZATION AND SERVICE.

TRANSPORTATION economy in its greatest measure is obtainable only through operating to a plan which will afford whatever service is necessary to meet the requirements of business interests with the fewest number of equipment units and employees. By this is meant that all duplication of service must be obviated.

The best example of such an organization is the United States postal department, which is national in its activities and is coordinated with the postal services of the world. The operations of the postal department are so well known that no further explanation is necessary.

Next to this is the American Railways Express Co., which is a combination of all the principal express companies of this country, brought about by war needs.

But because of the greater efficiencies and economies resultant from the consolidation the express companies included in it are desirous that the single organization be continued.

Obviously there is no reason to believe that one or several concerns could be organized to transport freight by

highway vehicles in sufficient volume to reduce the existing congestion of rail and water common carriers. There is no prospect that sufficient capital can be obtained to rehabilitate and re-equip the railroads, to say nothing of the need of increased trackage and improved rolling stock. The only prospect for relief is

quate service and economize capital, equipment and labor an organization that shall parallel the postal department and the American Railways Express Co., so far as possible, is essential. The development of such an organization from concerns of widely differing proportions, each operating independently of the

other, so as to afford the public continuous and dependable service at the lowest practical cost, may appear to be impossible, but while the proposition may be considered idealistic there is every reason to believe it well within the range of possibilities.

The skeptical may maintain that the organization and co-ordination of many concerns to operate practically as one company is impracticable, yet the Expressmen's League of Boston, which has

existed for 40 years, and which has been developed so as to serve practically all of New England, is an example of what can be brought about by business men with common sense methods.

The Expressmen's League was organized March 27, 1879, and it was incorporated January 7, 1895. Today it has



The General Express Office at 15 Merchants Row, Near Faneuil Hall and Qu'ncy Markets, That Specially Serves Both the Wholesale and Retail Marketmen of Boston for Local and Suburban Delivery.

the diversion of all "short haul" shipments from railroads to highways, leaving to the railroads the long and more profitable hauls.

Expressmen's League Organized 40 Years.

To transport the "short haul" tonnage of the country innumerable operating companies are necessary. To afford ade-



General Express Office at 104 Arch Street, in the Center of the Retail Store District, That Makes a Specialty of Department Store Distribution.

a membership of 66 different concerns having offices and terminals in Boston and affording service to a large part of New England. The League today is not as large numerically as it was prior to the world war, for the American Express Co. (one of the principal units of the American Railways Express Co.), withdrew when it was taken over by the government and operated under Federal administration, and a number of companies have discontinued operations because the cheaper rates of the parcel post service of the postal department diverted so large a part of their business they were no longer profitable.

Has Developed Best Public Service.

But the League has brought about the best express service in America and Boston and New England business interests have largely profited through the endeavors of the organization. While the membership of the League numerically is less than 20 per cent. of the individuals or concerns operating in or out of Boston, it represents a much larger ratio of equipment operated, because practically all of the members are well established and in many instances serve large territory.

Until the formation of the League all express companies operating in Boston were independent of each other. Many were competing with reference to territory and rates were destructive. A considerable part of the business was delivery of goods from wholesale and retail stores, and many shipments were made C. O. D. As the goods shipped were of material value and the collections were made by the expressmen the financial responsibility of the expressmen to the business men was vitally necessary.

The League members determined that they desired recognition as business men, in every way responsible to shippers, and that as such they would afford every reasonable protection to the public. To do this what was known as honorary League membership was created and upon payment of a nominal fee by an honorary member the League undertook to guarantee all C. O. D. collections.

Established Responsibility of Service.

The benefit of this membership may be best expressed by the following transcript from the League records,

which was approved February 13, 1895:

Voted, That from the above date until further notice, the League will collect, without extra charge for any honorary member, any lawful C. O. D. claim not exceeding \$300 against a member of the League, if presented for collection within 30 days of the date of the C. O. D. receipt; or if such claims accrue against such members to an amount exceeding \$300, the League will so collect for each claimant who presents his claim an amount which bears the same proportion to \$300 that his claim bears to the whole amount of all such claims so accrued and presented.

That the League continue to act upon all C. O. D. claims against expressmen in League offices, and collect claims against members without charge and to charge 10 per cent. for collection of claims against non-members to all except honorary members.

It was the formation of the League that established those engaged in the local haulage of property by highway vehicle in Boston and vicinity as responsible business men. This statement cannot be clearly understood without a presentation of facts concerning conditions.

Extremely Efficient Delivery Organization.

Boston is the commercial center for a considerable part of New England. With-

in a radius of 60 miles of Boston there is a population of approximately 4,000,000. Retail buying in the stores of Boston may be said to be limited to the 60-mile zone, but wholesale buying is done for practically all New England. Retail buyers as a rule exacted the delivery of purchases so that until the world war a delivery service existed in Boston superior to that of any other city in America or Europe. This may appear to be a very broad statement, perhaps not justified, but as a matter of fact the demands upon the large retail stores necessitated the development of exceptional means of serving buyers.

For instance, until the war needs caused curtailment of service customers living in many cities and towns within a radius of 35 miles, and during the summer months a considerably increased distance, could have delivery the same day of purchases made up to 4 o'clock in the afternoon, and in some sections as late as 5 o'clock. The distribution was made in part by the store organization within from 10 to 15 miles, but the remainder of the delivery within these radii and in the area outside of them was made by the express service. This rapid service necessitated deliveries well into the evening, perhaps as late as 10 o'clock in some places, but this was not a cause for criticism, but rather a result of unusual efficiency.

Influence of the League.

The volume of deliveries made C. O. D. was surprisingly large, and while some of the stores sold only for cash some of them, and in this class was the largest business of the kind in New England, had charge sales running as high as 60 per cent. of the entire volume and a considerable part of the remainder C. O. D. These deliveries necessitated obtaining signature on receipts and collections of bills.

In addition to the regular retail store distribution all of the wholesale deliveries aside from those too large to be shipped as express, or those in which time was not a factor, were made by the same service. Merchandise, materials and products of large weight and bulk were of necessity transported as railroad freight.

Prior to the war approximately 400 dif-



During the Business Hours of the Day Collections Are Made Continuously at This Terminal by About 100 Operators, in Addition to Their Other Calls on Order.

ferent companies and individuals were operating in and out of Boston, practically all of them conforming to the operating policies and standards of the Expressmen's league. These were the recognized units of a service that were included in the league list. The league officials passed upon this list and rejected all units not known to be financially responsible, for the public had accepted the listed units as being dependable.

The league members had established a standard for service and responsibility that practically all others were forced to conform to to attract and retain patronage, and failure to maintain this standard meant removal from the official list and consequent loss of prestige obtaining from the league testing.

The General Express Office Plan.

One of the results of the league activities was the establishment in different parts of the city of 14 receiving stations, which were known as "General Express Offices." These are private enterprises, some of them operated by officers and others by members of the league. The plan of operating is practically the same, but some handle larger volumes of business than others.

Nahant and desires to remove a few pieces of furniture from Brookline to Nahant. To do this it is necessary that he open his Brookline house. He can make appointment to meet an express operator's truck at his permanent home at a given time and deliver to the truckman the furniture. The furniture is carried to a point where it is transferred to another express operator, who in turn delivers it at Nahant and collects for the service, later paying to the first truckman his proportion of the amount paid. But the payment could be made when the order was given, in which event it would be divided and remittance made to each truckman through the general office.

How Transfers Are Made.

If more than two truckmen were involved in the work the same system would be followed. This system applies to any shipments. Assume that it was necessary to transfer a shipment to four different operators. Each would carry it to a point for transfer and deliver it to another, receiving receipt for each transfer and eventually for delivery. The package could be prepaid or sent C. O. D. Shipments may be delivered at the re-

In each general office is a series of 100 or more order boxes, these being arranged somewhat like filing cabinets, the drawers sliding through the frame holding them in either direction, so they may be opened at the front or rear. On the front of each drawer is the name of a company which has its terminal in the office, paying a specified amount monthly.

For the assessment the general office becomes the representative of the subscriber, issuing receipts, receiving payments, making collections, making payments, supplying information to shippers and affording him better office service generally than would be available were he to maintain an independent office. Each office has adequate telephone service, including private connections, public 'phones, and what are known as "express" lines. The "express" telephone service differs from the public service in that an operator receives calls for a given office, and when these are accumulated, sometimes to the number of 75, they are transmitted one after the other to a clerk, who writes on blanks, abbreviating them so far as is possible. These calls must be transmitted and received



One of the Oldest General Express Offices at 15 Devonshire Street, Which Receives from 185,000 to 200,000 Telephone Orders a Year, and Where About 100 Operators Make from One to Eight Calls a Day for Collections. At Left, a Truck "Picking Up" Packages; at Right, the Sidewalk Clear, an Unusual Condition During Business Hours. This Office Is Managed by the Secretary of the Expressmen's League.

These stations are today located as follows:

104 Arch Street	15 Devonshire Street
73 Beach Street	77 Kingston Street
130 Bedford Street	13 Merchants Row
103 Central Street	30 Nashua Street
37 Chatham Street	127 Providence St.
240 Congress Street	232 State Street
32 Court Street	16 Union Street

The General Scope of Operations.

Some of these stations are close to each other, but the locations are with the view of best serving the demands of the people. First of all they are the terminals of different express capacities. They will receive express shipments for any shipper to any destination reached by a local, state, sectional or national express service. They will quote rates for any shipments and issue receipts and accept payments, no matter how many transfers from one concern to another may be necessitated. Not only this, they will make arrangement for any shipper or individual for any general or special service.

To illustrate: Assume that a resident of Brookline has a summer home at

ceiving stations or orders left for collections.

Each of these general offices or receiving stations is in charge of a man who knows the express service to any point in New England, and generally for the entire nation, who can give definite and dependable information relative to any need. He has available all the data to be found at any express company's office and he is authorized to represent any of them. The same statement applies to all the local express services, but in addition he can advise with reference to times of deliveries, so that a shipper can ascertain approximately, at least, when a delivery can be made.

The general offices have sufficient storage area to serve all express companies and shippers. As collections are made very frequently there is seldom any large accumulation. Besides floor space the companies of which they are terminals have large covered bins into which packages are placed as received, so that there is no probability of mistake or confusion or loss of packages. The large packages or units are grouped on the floors for each company.

with great care to avoid error.

Time Economy for the Public.

These blanks are then placed in the drawers of the subscribers and they are taken out by the drivers and arranged in the order for the calls. Some offices receive more calls than others, but at 15 Devonshire street, for instance, upwards of 7000 "express" telephone calls are received monthly, and on the three other telephones at least 8000 more a month. the total for the year ranging between 180,000 and 200,000, in addition to the orders received by letter and by personal call. As this office is open during the usual business hours of the day and a half day Saturdays, something like an average of 500 telephone calls are made daily.

The value of the "express" telephone service is that it economizes the time of the telephone operators and the clerks in the offices, there being but few connections and numerous orders for each instead of innumerable individual calls. It is exclusive for the express offices, however, and obviously can only be had through special arrangement with the telephone company.

Calls and Collections Plan.

Some subscribers to the general office service have terminals at as many as nine offices, while others have one only, depending upon the number of vehicles operated and the needs of the shippers. All subscribers have stated times for collection calls at the offices, ranging from one to nine daily.

As a rule the subscribers have suburban terminals where orders may be taken. These may be offices, garages, stores or residences. Many subscribers have regular places for call for collections of shipments into Boston, and in Boston make calls for delivery and for collection, the latter being regular or daily and to order. For these concerns the general express offices afford the best of representation at a comparatively small individual cost, which could not be equaled by an independent office, no matter what the equipment or the num-

fluence of the rates established by the general offices, however, is stabilizing for the operators could not expect to make varying charges for the same service and retain business.

Regularity and Dependability of Service.

Through the general express office regularity of service is assured and the collections are made to definite schedules that have been established by practice. The regular collections insure deliveries within reasonable time periods, so that business men can guarantee to their customers distribution that is more frequent and faster than in any other city, while the service is to any place in New England. Outside of that section the service is not guaranteed.

The expressmen directly benefit from the plan in that business is promoted, but at the other hand the public benefits to a far greater degree in that it has service far superior to that available

This information is classified under the general heading "Boston offices and hours of leaving the city," and it is preceded by these notes:

Expresses are shown alphabetically, and "Mr. Z," although he comes last, is in every respect equal to "Mr. A," who appears first. We make this explanation as a number of expressmen have changed their names in order to precede a competitor. When you have no choice, select the one whose office is nearest your place of business.

As it is impracticable to investigate the existence and reliability of each concern doing an express business, this is not a complete list of all reliable expresses running from Boston. Anyone omitted is invited to submit its statement and any subscriber (to the publication) knowing anything calling for the omission of any concern appearing on the list is invited to report it to us.

When the state is not mentioned, the town is understood to be in Massachusetts.

Complaints of the non-payment of C. O. D. bills, stating date, amount and consignee may be made to E. C. Walker, 42 Hartford street, Boston, Mass. (president of the league.)

Ideal Directory of Express Service.

The "Express List," in addition to information of the express companies, has an alphabetical arrangement of all the villages, towns and cities of New Eng-



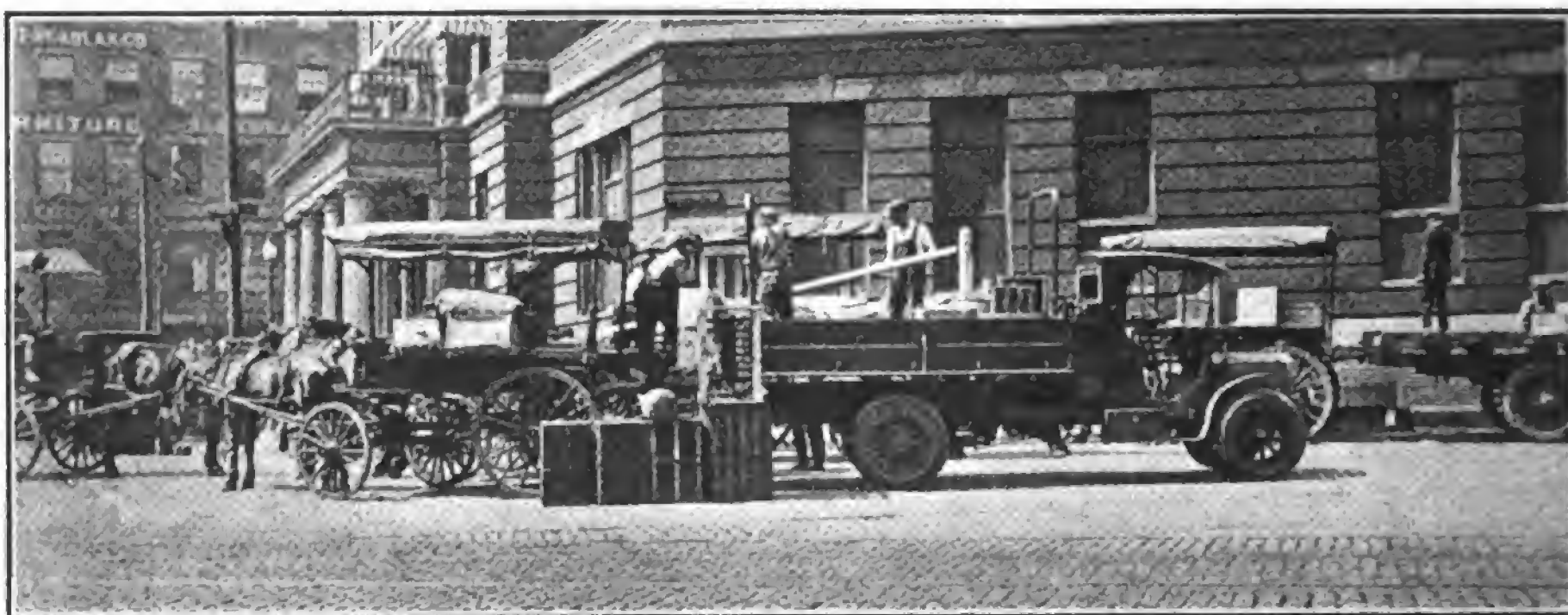
Haymarket Square, One of the Central Points of Transfer of the Boston Expressmen, When Transfer Must Be Made by More Than One Operator.

ber of employees, and the operating expense would be many times larger.

Service, Not Competition, Is Encouraged.

The general offices in addition are widely known and they are a great convenience to the shippers. Through them delivery is made of practically every form of commodity that can be hauled, and there is a surprisingly good organization and a business like system when one considers the multiplicity of interests. The general offices practically cover the same territory, but no one office will accept as a subscriber two direct competitors. That is, a complete service is comprehended, but where one concern might have a profitable business in one section to have two competing might be destructive and would not better serve the public.

In one sense the plan is cooperative because it gives the subscriber a very large return for a small expense, which would not be possible under any other conditions. At the same time it has developed business very largely. While the express operators may make different prices to different customers for practically the same service, the rates quoted by the general offices are standardized, and in all cases the full charge includes war tax, for war tax must be paid whenever an operator hauls in competition with a railroad or water carrier, no matter if the haul be a very short distance, even less than a mile. The in-



Transferring Freight at Haymarket Square: Exchange May Be Made Quickly if the Volume Is Small, but Not Infrequently an Entire Load Is Handled.

in other sections of the country for comparatively low rates.

Value of the Express List.

Reference has been made to the listing of the express companies under the supervision of the Expressmen's league. This list is compiled and published by the publisher of railway guides and includes the individual operators, each group being designated by letter and alphabetically arranged. In this no fact is stated save the name of the operator (with no specification of the individual service except to give the section or suburb served in the event of two concerns operating under the same name), the general express office or offices to which it is subscriber, the location of independent office or order books, if any, and the time or times collections are made at the general office or offices.

land, and with each is the name of the company or companies which serve it, the number ranging from one to 19.

These lists are issued quarterly and are prepared for binding, so that they can be used continuously without destruction. They are necessary in the shipping departments of practically all business enterprises and extremely useful in all offices. With a list any person can obtain facts or information relative to shipments to any point in New England, and by communicating with any of the general offices can obtain precise detail of any service. The value of the list to the public is the use made of it, and this use is in ratio to the public knowledge. Obviously, were the Expressmen's league to inaugurate a campaign for the development of business the result would be extremely productive.

Service Into Boston Equally Good.

One has no doubt noted that the general express offices serve as terminals for the operating companies, up to perhaps 100 in any one office, and there are 353 companies and individuals listed. Some of the companies have terminals in other sections of or outside of Boston, but as a rule, unless operating in communities of considerable proportions, do not establish them. The reason is that there is not the same volume of freight hauled in either direction, the movement outward greatly exceeding the movement inward. The distribution in Boston may be widely scattered, but the collections are at few points. The deliveries and collections outside are generally in large areas.

There are no stations where general exchange of freight is made from the one company to another, but the companies that regularly or occasionally transfer freights do so at certain places that are convenient and are agreed upon by the operators. One place where probably the greatest number of transfers is made is Haymarket square, where at agreed times the drivers meet and make exchanges. In some instances the exchange may be a package or two, and in others even a large part of or even a whole load. This plan works out very satisfactorily and there is no expense incurred. One of the chief advantages is that the vehicle mileage is minimized and whenever desirable the place of exchange can be varied to meet any condition. Were there permanent transfer stations there would of necessity be rental, heating, lighting and clerical costs and extension of responsibility.

While the records of the companies are kept to the simplest forms, the

records of the general express offices, which must include the shipments made through them, the payments and collections and divisions of receipts, must necessarily be the same, though the entries will vary in number, for each concern. Long experience has developed systems that are adequate and accurate and with known responsibility and sufficient record to establish this, the operating plan has been proven from every point of view.

With comparatively few exceptions power trucks are used by the companies, and those who are engaged in this work maintain that no freighting business can be profitable without machine equipment. One reason for this is that while the routes may be in comparatively small areas the mileages may be large, and when these are covered several times daily the total for a machine may be from 30 to 75 miles, according to the number of trips.

With the power trucks fast time can be made, which is necessary from the fact that stops may be frequent, and as a rule the freights are heavier, although the number of small packages sent by the shipments are generally those that cannot be sent by parcel post, unless time is important. During the last few years the parcel post has greatly reduced the number of small packages sent by express, for the postage is considerably less than express charges, and price is the influencing factor with shippers.

Example for Transportation Development.

The express companies are today handling a good deal of the shipments that would be sent by freight were there service that was regarded as dependable. The express operators believe that this

volume will be considerably increased because of the general advance of freight charges.

The operation of the Expressmen's league is the best example of transportation by coordination of independent operators in America, and while there is no doubt the plan can be materially improved and the service made more efficient, it is an extremely practical basis on which to create a nation wide highway transportation organization.

The great obstacle to promotion of power vehicle haulage has been that each individual or concern attempts to operate independently instead of undertaking to afford cooperative service, such as has been done by the Expressmen's league. While some sections are better served than others this is not because the plan is poorly conceived or inadequate, but is due to the fact that there is not sufficient business to return profits that would insure better service.

The people today want the best transportation at the lowest possible prices. The highways are free, they are constantly being improved, and many different interests have urged the operation of companies affording good service. But mere advocacy of a proposition without a practical operating plan will hardly lead to results. Neither will the establishment of a few companies stimulate the organizations of a sufficient number to afford service that will meet the needs of the people.

Whatever is done should be on a large scale, to a plan that will attract all engaged in highway transportation, so that there shall be no duplication of service, no destructive competition, standardized rates and operations that will be in ratio to industrial and commercial needs.

FARM TOUR BIG SUCCESS.

One of the most successful farm development tours conducted in this country has just been run under the auspices of the Rocky Mountain Auto Trades Association. The tour lasted three weeks and covered 1000 miles in 13 counties of Northeastern Colorado. There were 16 demonstration trucks and four service cars and trucks in line.

The trucks, which were all entered by Denver distributors, ranged from $\frac{3}{4}$ to three-ton sizes, were on pneumatic tires and were equipped with bodies suitable to diversified farming. An extra truck carried a band of 25 boys and one accordionist. Four marines manned a government truck, equipped with machine guns, mortars and aerial bombs, some of the latter being fired as each town was sighted. An airplane accompanied the motorcade and bombed the towns with hand bills.

The tour not only proved to the farmer the economy and utility of the truck in hauling grain and livestock, but it demonstrated the essentiality of this vehicle to many bankers, aroused enthusiasm among sub-dealers and caused many passenger car dealers to seek truck agencies.

200 TRUCKS ON PARADE.

Thirty-one dealers showed 40 lines of trucks at the fall show held at the Iowa state fair, Aug. 25-Sept. 3, under the joint auspices of the Des Moines Automobile Dealers' association and the Des Moines Motor Truck Dealers' association. The last day of the fair was officially designated as motor transport day and 200 motor trucks, four abreast, circled the track in parade.

TRUCKS AT BROCKTON FAIR.

A tent 200 by 60 feet will be erected for the display of motor trucks at the automobile show in connection with the annual fair at Brockton, Mass., Oct. 5-8. Passenger cars and accessories will be shown in a new building constructed for that purpose. The automobile show will be under the sanction of the Boston Automobile Dealers' association.

TOLEDO TRUCK TOUR.

Motor truck dealers of Toledo and northwestern Ohio have completed a highly successful farm demonstration tour, lasting five days and covering 15

towns in seven counties. There were 11 demonstrating trucks of different makes on tour and all showed 100 per cent. efficiency in the various tests. The Willys light plant, gas tank and other equipment, were carried on five trucks. Addresses and motion pictures were given at night meetings. A prospect list was also prepared.

MINNEAPOLIS SHOW FEB. 5-12.

The Big Exposition or Winter Show in Minneapolis under the auspices of the Minneapolis Automobile Trade Association will be held at the Armory, Feb. 5-12, and will be under the management of Walter R. Wilmot, assistant secretary and manager of the association, with offices at 709 Andrus building, Minneapolis.

AUTOMOTIVE SHOW NOV. 15.

The Automotive Equipment Association show will be held in the Coliseum, Chicago, Nov. 15-20, and will include the leasing of the equipment of the American Railway Appliance Co., a novel exhibit.

AUTOMOTIVE TRAILER UNITS

TRAILERS, semi-trailers and special units intended for the transportation of materials of unusual length, are built by the Automotive Trailer Corp., Springfield, Ill., and the series is intended to meet the requirements of those engaged in any character of highway haulage.

The standard four-wheel type, which is drawn in one direction, is built in one, two, three, five, seven, 10 and 15-ton capacities. The four-wheel reversible type is built in 2-3, 5-7, 10-15 and 20-ton capacities. The semi-trailer, recommended for use with a tractor-truck, is rated at 1½, two, three, five, seven, 10, 15 tons capacities. The pole trailer is built in one, two, five, seven, 10 and 15 tons capacities, and the two-wheeled trailer constructed for use with passenger cars and light trucks is produced in one half, one, two and three-ton capacities.

All of these can be equipped with bodies adapted to special requirements, and the general character of these depend upon the work to be done. Standard types are generally used, but some of the bodies are exceptionally interesting developments.

Some General Specifications.

Covering so wide a range of sizes general specifications must be given, and with reference to these the frames are pressed steel, hot riveted, with reinforced cross members; the springs are Tuthill semi-elliptic, of chrome manganese steel, one end of each being shackled, with heat treated spring bolts, oilless bushings and both eyes bushed; the axles are chrome vanadium steel, round section hammered forgings, with taper spindles, heat treated; the wheels are steel with the hubs cast integral; the tires are solid rubber, pressed on, but pneumatic tires are supplied to specification on units up to and including five tons capacity; the bearings are Bock or Bower roller types for the wheels, Bound Brook oilless type for the king pins, fifth wheel roller, spring bolts, etc.; the tongue couplings are angle iron, V construction, bracketed to the sub-frames, hot riveted electric furnace steel castings, the loads being taken through the spring rods to the sub-frames and transmitted to the main frames through the roller bearing turntables and kingpins. Some of the units are equipped with universal joint type tongues. The units are also fitted with the standard "class B" tow hooks, approved for government use.

Standard Four-Wheeled Type.

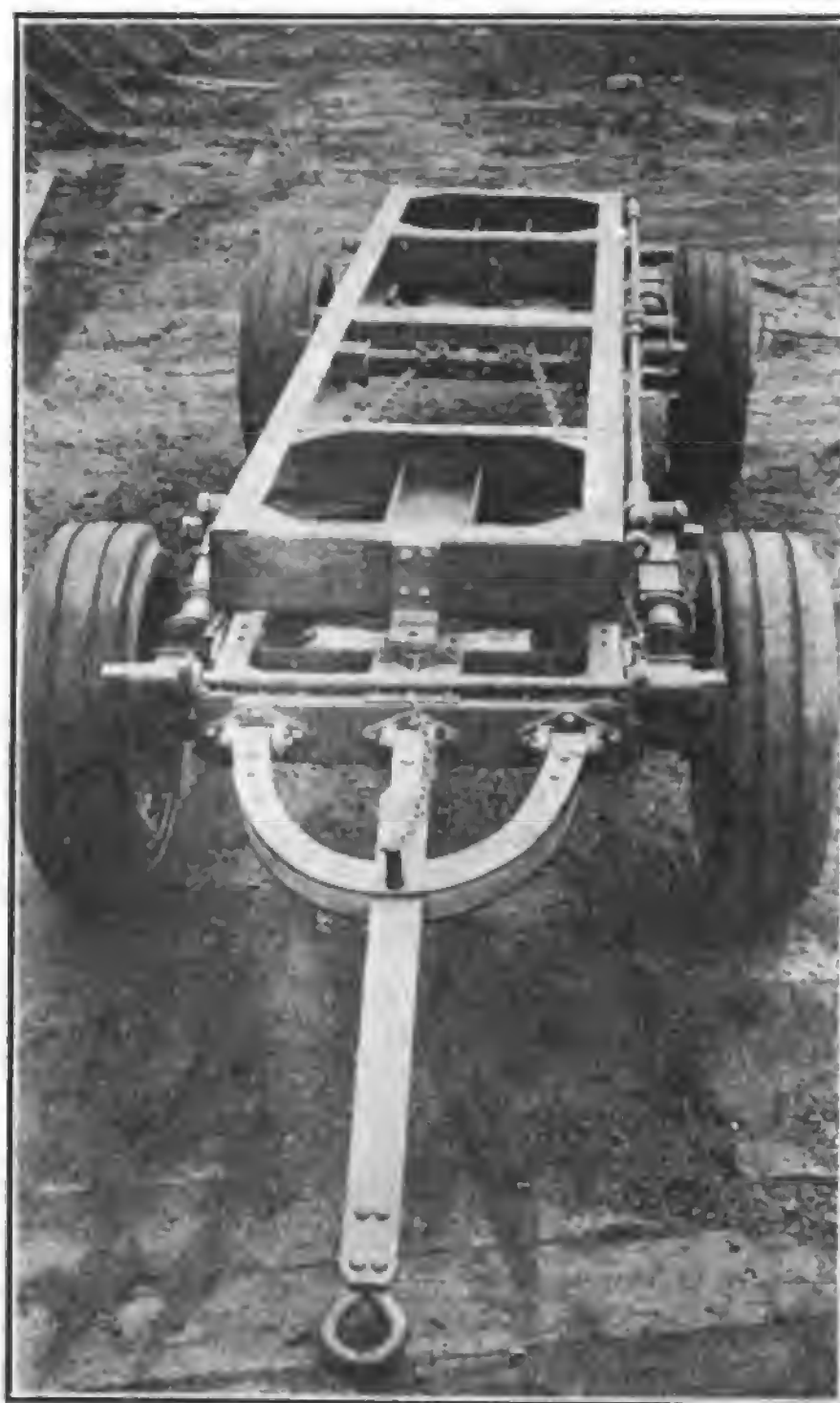
The standard four-wheeled trailer frame is mounted at the rear end on springs that are pivoted at the front ends on hangers, braced by a cross rod between the hangers, the rear ends being shackled. The hangers are well dropped to afford height. The forward end of the frame is carried on a turntable that is on a rectangular frame supported by the springs, similarly pivoted and shackled, and to this turntable frame the tongue is pivoted so that the forward end may be coupled to the towing vehicle.

The front axle is dead and the turntable may be swung an angle of 90 degrees for turning. This type is not designed for backing, but when the unit is to be backed the frame is dropped eight inches and a steering device attached to the front truck so that the truck may be turned to a maximum angle of 40 degrees. As designed, only the axle spindles require lubrication, for all other bearings are fitted with oilless bushings.

The wheelbases of these units vary from 72 to 106 inches and the treads from 56 to 72 inches, while the length, width, depth and flange of the frames, the length, width and number of leaves of the springs, the size of the axles, the wheels and the tires vary in dimensions with the capacities.

Four-Wheeled Reversible Trailers.

The four-wheeled reversible trailer,



Automotive Reversible Trailer, Showing the Flexible Tongue and Four-Wheel Steering Device.

which is illustrated, has a special type frame that is mounted at either end on roller bearing turntables, the lower sections being on rectangular steel frames that are suspended on semi-elliptic springs carried on the dead axles. Either end of the trailer may be locked in a central position while being towed from the opposite end.

For use where backing is necessary the unit is equipped with a device by which it may be steered into any position. The steersman does not walk backward holding a tongue that may be thrown out of his hand by rough ground. He guides the trailer from either end and controls either or both the trucks, and he can observe conditions and steer so as to avoid obstacles and reach an exact position.

The steering device is exclusive with

this company's vehicles and the control is by shafts located at the center of the frame from which chains extend to the truck frames. By a spur gear, a worm wheel and worm shaft the shafts may be turned and the trucks swung to any desired degree. As the wheels are secured in any position until changed the movement of the trailer is positive.

Another feature is the flexible tongue construction. When towing forward the pin is located as shown in the illustration, but when reversing and steering is by the rear wheels the pin is removed from the tongue and set into a bracket on the frame, which locks the main and turntable frame. The tongue can then oscillate vertically or horizontally and align itself with the tractor. These units are built with wheelbases ranging from 88 to 106 inches, and with treads from 56 to 72 inches. The dimensions of the frames, springs, axles, wheels and tires differ, but the design is standard.

The Semi-Trailer Units.

The semi-trailers are built with steel wheels on a dead axle on which is mounted a pair of semi-elliptic springs, the forward ends being pivoted in the hangers and secured by a tie rod, to which rear ends are shackled. The forward end of the frame is carried on a rocking, spring-cushioned roller bearing turntable.

This turntable consists of two brackets bolted to the frame of the tractor in which are seated the trunnions that carry the rocking lower section. The movement of the section on the trunnions compensates for the inequalities of the road surface. On either side of the section are springs that absorb the stresses of starting and stopping.

Four roller bearings with oilless bushings are mounted on the section with their centre lines running radially from the kingpin bracket. The upper section of the turntable consists of a ring that swings on the roller bearings and sets into the lower section. These turntables are made in three sizes, 12, 24 and 36 inches diameter of ring.

Pole and Two-Wheeled Trailers.

The pole trailer consists of a pair of steel wheels on a dead axle on which is mounted a set of semi-elliptic springs, pivoted at the forward ends and shackled at the rear ends to heavy hangers on which is carried a rectangular steel frame, with a bolster that may be stationary or pivoted. The tongue is an I beam 20 feet long that may be adjusted for length by a pin through the frame. This is used for hauling material too long to be carried on either a truck, trailer or semi-trailer.

The two-wheeled trailer consists of a long frame that is carried on semi-elliptic springs pivoted at the forward ends and shackled at the rear ends on a dead axle and steel wheels. The frame is extended forward in triangular form to serve as a tongue and this can be coupled to a drawhead and used with cars and light trucks.

EATON ONE-TON TRUCK AXLE

DESIGNED for construction of trucks that may be classified as "speed wagons," that have load rating of one ton or less and are utilized for fast haulage of light loads, the Eaton Axle Co., Cleveland, O., has begun production of a unit that is known as model 1000. The plan of the company is to produce the axle in large volume and as the series is developed each will be specialized in like manner.

The Eaton axle is a bevel gear type that is claimed to be extremely efficient and to meet the demand of truck manufacturers who have heretofore been unable to obtain high grade axles in sufficient number to justify quantity construction of machines that may be included in the classification specified.

Statement is made that the Eaton company's engineers based their determination on the conclusions that the bevel gear type delivered a greater percentage of power at the rear wheels, that its upkeep cost is lower both from replacement and effect upon other chassis components, especially tires, because the unsprung weight is less (which is especially desirable when pneumatic equipment is used) and that it is self-contained and dust proof, effectively retaining the lubricant in the housing.

The axle is a semi-floating type, the housing being pressed steel. The housing has square sections at the spring seats to obtain variable location of the springs and to insure secure seating. It is intended for Hotchkiss drive, but can be equipped with radius rods, or torque arms can be supplied if necessary.

The Differential Gearset and Carrier.

The rear of the center section is enclosed by a hemispherical cover plate, and on the front of the section is bolted the differential carrier, which is in two parts, one carrying the differential gearset and its bearings, and the other the driving pinion and its bearings. As will be noted in the drawing the rear of the differential carrier is supported by a ring web that seats against the cover plate.

The mounting of the driving shaft is

unusual, there being bearings ahead and back of the pinion, the rear bearing being carried by a web that locates it inside of the toothed face of the master gear, so that there can be no side pressure on the shaft end and no variance in the alignment of the pinion and gear. The shaft and the differential gearset are both mounted in taper roller bearings. Claim is made that this construction obtains a decreased overhang of the carrier from the center line of the axle, there is more uniform loading of the bearings, and positive lubrication of both shaft bearings from the splash of the master gear. The pinion shaft bearings are both adjustable from outside, so there need be no possibility of foreign matter being carried into the housing. There is an adjustment for the differential bearings at either side of the carrier.

A new type locking finger is used for the pinion bearings, which is claimed to be a considerable improvement. The pinion is adjustable with shims, but realizing the possibility of change of the pinion adjustment while adjusting the bearings the designer made provision that this is "fool proof," and the initial adjustment made at the factory should rarely be changed.

Other Details of Construction.

The outer ends of the housing are flanged and to these are riveted the brake spiders, in which are seated the taper roller bearings, and these are secured by a locking device, dust and water being excluded by a ring. The spiders carry the outer ends of the brake rods. The brakes, which are very important when a vehicle is driven fast, are internal expanding, these having double self-centering shoes that operate within 16-inch pressed steel drums bolted to the rear wheels. The shoes are actuated by double-toed cams and levers located inside the frame.

Statement is made that much care has been exercised in designing the axle to obtain proportions that afford ample factors of safety, and the materials selected are high quality. The gears are carbon

and nickel steel, the axle shafts are chrome nickel steel, the housing and brake drums are pressed steel, and the brake shoes are malleable iron castings with thick linings. The pinion shaft and differential carrier is malleable cast iron, but lynite may be specified and used at a somewhat increased cost.

MOTOR TRUCKS IN CHICAGO.

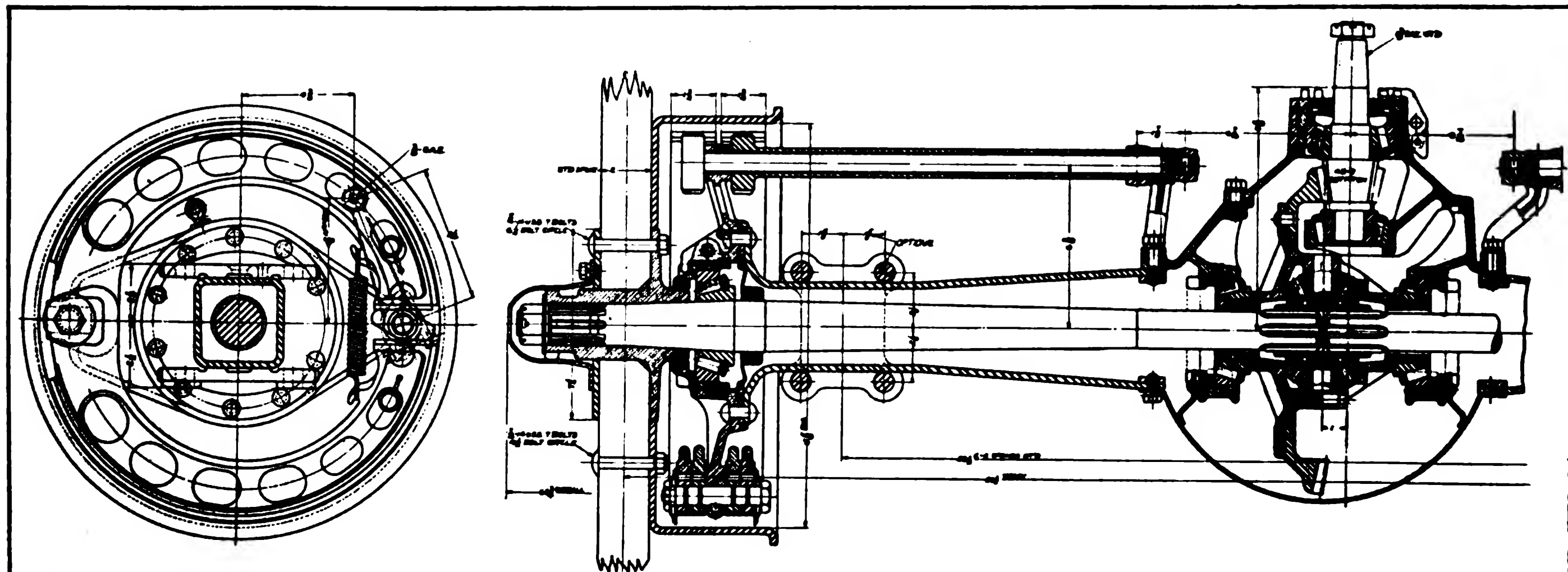
It was shown at a recent hearing before the city council concerning proposed motor truck ordinances that motor trucks in Chicago average about 1,000,000 ton-miles per day. It would take nearly 70,000 two-horse teams to perform this work. This would mean nearly 140,000 more horses in the city. If motor trucks had not been invented the bulk of the commercial traffic in Chicago would be five or six times as great as it is now. The traffic would be many more times as heavy because wagons move much slower than trucks.

It would take about 20,440 freight cars to bring in the food that 140,000 horses would eat in a year's time, not taking into consideration the straw and bedding that would be used.

The land that would be required to raise the food for these horses would support 168,000 people. The value of this amount of human food would be, per year, \$58,240,000.

AUTO MEN TO HEAR HARDING.

The joint meeting of the credit and advertising departments of the Motor and Accessory Manufacturers' association at the Hotel Statler, Cleveland, O., the afternoon of Sept. 16 will be featured by an address by W. P. G. Harding, governor of the Federal Reserve Board, who is expected to discuss the credit and financial situation as it affects the automobile industry. William Huff, advertising manager of the Detroit Pressed Steel Co., will be the principal speaker at the Friday morning session of the advertising men.



The New Semi-Floating Bevel Gear Eaton One-Ton Truck Axle: At Left, the Internal Expanding Brake; at Right, Cross Section Showing the Mounting of the Pinion Shaft Between Bearings, the Differential Gearset and the Axle Shafts.

PNEUMATIC TIRES AN ECONOMY IN SPRING WATER DELIVERY

Just because Fisk cord tires came as standard equipped on two International $\frac{3}{4}$ -ton trucks, the Puritan Bottling Co., 30 Sheldon street, Providence, R. I., recently purchased, Al Murphy, the company's delivery manager, a crank for a decade on solids, was converted over night.

Mr. Murphy agreed to try out the pneumatics as it "didn't cost any more."

Now it's pneumatics for him for aye.

The extra speed and the splendid condition in which the trucks are preserved through running on air is one of the chief causes why the company now gets along with two of these vehicles, where three have been in use at times in the past. The two are run extra hours, however.

The Puritan trucks go on the job during the summer season, when the call for soft drinks is incessant, at 7 in the morning, and seldom are put up until 9 o'clock at night. They work Saturdays and

The $\frac{3}{4}$ -ton pneumatic tired whizz wagons, running from 7 in the morning until 9 at night, must go 50 or 60. Doing this on three gallons of gasoline is some stunt.

Quick Convert to Pneumatics.

The Puritan Bottling Co. is no new devotee of the truck. The company bought its first International back in 1912 and has had one, two and three on occasions since. Although all the trucks were small size vehicles, Al Murphy, who has charge of this end of the business, stood out for the solid tires against many loads of argument for the pneumatics.

The two $\frac{3}{4}$ -ton Internationals were bought in March of this year, with their Fisk cords. Then it was aH off. Mr. Murphy knows a good thing when he sees it. He recognized the worth of the new equipment before it was in service one week. No more solids for him.

The only untoward incident attendant upon the use of the pneumatics was

The two Internationals in the service of the Puritan Bottling Co. are equipped with Babcock stake bodies. These stakes can be taken out readily and both loading and unloading may be done at either the back or sides. In an emergency these trucks have carried two tons, but Mr. Murphy does not make a practise of loads of this magnitude and does not advise others to try the experiment.

One big advantage that the pneumatic-tired equipment has been to this company is that their speed has allowed extra trips weekly to Oakland Beach, a summer resort 10 miles below Providence, where the concern makes bulk deliveries during the beach season. The trucks also operate as far as Greenville, which is 10 miles north of Providence, thus taking in a territory 22 miles in length.

TRUCK HAULS 113 TONS A DAY.

The Tennialark Transportation Co., Nashville, Tenn., has eight $3\frac{1}{2}$ -ton Diamond T trucks at work excavating and filling on a new road grade through very difficult bottom land and along a levee between Memphis and Millington, and is proud of the performances of these vehicles. The trucks are equipped with steel dump bodies and hydraulic hoists. Each truck travels 40 miles a day, making over 26 trips to a dump three-quarters of a mile away. About 8700 pounds is taken in each load. Each truck thus moves 226,200 pounds in a day, the eight hauling nearly 2,000,000 pounds. Operating expenses are also very low.

FIGHT ON MIRRORS WON.

Motor truck owners have won their fight against the state law in Kentucky which provides that trucks must be equipped with driving seat mirrors obtained from the State Tax Commission. A permanent injunction has been issued restraining the commission from enforcing the act, which would mean a new mirror must be bought every time a license is issued.

GMC SUBSIDIARY CLOSED.

The steering gear plant of the General Motors Corporation, Saginaw, Mich., will be closed until the latter part of the month, 750 employees being effected. This department has been ahead of the other divisions and the month's shut down was made to allow the other branches to catch up.

STERLINGS IN CAROLINAS.

A branch for the distribution of Sterling trucks and Monarch tractors in the Carolinas will be opened by L. F. Hobbs, Norfolk, Va., at Charlotte, N. C. The branch will be in charge of R. W. Dodgen, formerly of Spartanburg, S. C.



Two International $\frac{3}{4}$ -Ton Trucks Used in the Service of the Puritan Bottling Co., Providence, R. I., with Exceptional Tire and Fuel Economy.

Sundays, too, during the rush. In winter they naturally get a rest.

Truck Mileage is Very Variable.

Mr. Murphy would not estimate how many miles these trucks run daily. One is always sent over a regular route, making as many as six trips. The engine is hardly ever idle, the stops being made in rapid succession. The other is used for general deliveries and is also at work constantly.

The remarkable part of their work is that each averages but three gallons of gasoline and very little oil during this busy season.

Running on solids the old trucks used by the concern went something like 10,000 miles a year, an average of about 30 a day. But these trucks were run little in winter and did the greater part of their work during the few months when the heat drives the public to drink. It is almost safe to say that these solid-tired trucks covered 40 miles a day in the summer stretch.

when a spike went clear through one of them. The puncture was repaired and the tire bids fair to overlook the accident and make good on its 10,000-mile guarantee, with many miles thrown in for good measure.

Mr. Murphy has found, of course, that the pneumatics speed up the truck and save wear and tear. The feature of the cord tires which appeal to him most comes in the effect on the drivers. Some employees and executives are human and have a fellow feeling for their workers. Mr. Murphy is of this type. He is proud and happy in the fact that the drivers who used to come in at the end of a long day, tired and worn out after the extended stretch in driving the solid-tired trucks now report when the last delivery is made as fresh and bright as when they started out with the first load at 7 a. m.

He believes the saving of human energy to be the biggest asset of the pneumatics.

TRACTORS AND SEMI-TRAILERS FOR HEAVY TIMBER HAULAGE



Knox Tractor and Extension Semi-Trailer with Typical Load of Lumber Starting from the James A. Potter & Co. Yard at Providence, R. I.

A TRACTOR and semi-trailer transportation plan has proven the only practical, efficient and economical method of haulage for James A. Potter & Co., Cray street, Providence, R. I., a concern which has been specializing in the sale and delivery of long-leaf yellow pine for nearly a century. Some of this pine runs 60 feet in length and is beyond the carrying power of horse drawn vehicles or even the trailerless motor truck.

This company now delivers its product to a territory radiating for 20 miles around Providence in every direction. Up to acquiring its first motor driven unit five years ago only local deliveries could be made. Motor power has been a tremendous force in making the organization the largest lumber operator in its field, the James A. Potter & Co. being today the largest distributor of yellow pine in the state.

The tractor-trailer system has multiplied the zone of operations and jumped the delivery tonage many times. It has given greater satisfaction to the customer who gets his lumber in large lots and very rapidly. As the patrons of the firm are mainly contractors to whom delay in finishing a job on contract time means a big money loss, the item of quick and dependable service is important.

A herd of horses would be necessary to do anything like the work the four power units in the company's service is doing today. Much of it could not be done by horses. The animals could hardly make deliveries calling for an outward run of 20 miles and the same distance back.

Space counts with a lumber concern, which has great quantities of material to be stored, an office, saw mill and other buildings. The housing of the number of horses that might be adequate to the company's present hauling needs would require most of the space now used in the business. The cost of feeding such a number of horses would, of course, be prohibitive.

The company operates with three Knox tractors and a Ford truck chassis,

all of which are fitted with fifth wheels, and the Knox machines are used with semi-trailers that have stake platform bodies, or with semi-trailers that can be extended to any length to take timber up to 60 feet long. The standard length of timber is 16 feet, and this length can be carried on the semi-trailer bodies without much overhang, and when longer material is carried the semi-trailer is a different type, the two trailer wheels carrying a platform suspended on semi-elliptic springs on which is a bolster with side stakes or stanchions, between which the lumber is piled.

The fifth wheel of the tractor carries a similar platform and bolster that is coupled to the rear platform and wheels by adjustable reaches that are secured with pins, and by simply removing the pins and moving the rear wheels nearer or farther from the tractor the trailer can be lengthened or shortened at will and with minimum of labor. The reaches are wood and can be renewed when necessary without special fitting and at very small expense.

The semi-trailer generally used with the Ford truck is similarly designed and with it light loads of long lumber can be hauled. The chief advantage of this

equipment as compared with the other tractors is its speed and small operating cost.

When the longest timber is carried the reaches are extended and after the load has been put on the reaches are chained to the lumber. The semi-trailer and load is then as easily handled as a platform semi-trailer, the only requirement being sufficient room for turning and backing when necessary.

The tractors are chain driven and these are equipped with large locomotive-type brakes on the jackshafts, and with hydraulic brakes that operate in drums on the rear wheels. With these the heaviest loads hauled can be handled on hills with absolute safety. The Ford truck chassis has the usual brake equipment, which is adequate, as the loads are comparatively light.

The loading is generally done with power derricks, conveniently located about the mill and yard, and with slings the heaviest timber can be handled quickly and placed precisely. With yard gangs doing the loading the tractors are kept moving practically all the time, save when coupling or uncoupling the trailers.

Used Trailers Five Years.

James A. Potter & Co. got its first power vehicles about five years ago and will always consider the purchase date as its lucky day. The unit bought at that time was a Knox tractor, with extension iron dump body, the latter being especially constructed by the Knox people to designs and specifications prepared by the purchaser.

The other Knox tractor and the special Ford outfit have been in service some time. Whether the extension wooden bodies come up to the dump arrangement is a question for argument. The dump idea works finely in many cases. Dumping eight or 10 tons of lumber meets objection from many customers. Some want their timber placed on a platform and others very strenuously oppose the idea of obstructing a passageway or other area. Taken as a whole



Semi-Trailer Body, Adjustable for Varying Length of Load, Built by James A. Potter & Co. to Handle Any Timber Up to 60 Feet in 10-Ton Loads.

dumping the load has no striking advantage.

Wooden Bodies Stand Up.

The wooden bodies are much cheaper and stand up as well. The bolts in these bodies wear out and the rivets are sheared off of the iron equipment. The length of service without a need for repairs is about the same. The wooden body is easier to repair and can be mended in jig time in the company yards. The cost is nil. This is not always true of the other construction. An entire new wooden body can be made by employees of the James A. Potter & Co. out of the long-leaf yellow pine in two and a half days. It would take the factory as many weeks to turn out the special iron body required. There is of course no comparison in initial cost.

Another point that favors the wooden trailers is that they are wider and will take six 12 by 12 inch timbers laid in a row against five on the iron body.

Loads Limited by Law.

The size of the load which can be hauled on these semi-trailers is limited only by law. The Rhode Island measure

tractor-trailer outfit operated by the Potter company.

Neither truck nor trailer is superior to horses in every phase of lumber hauling. The distance covered, the speed traveled and the tonnage hauled are their biggest advantage. It has been shown in the experience of lumber dealers that a double-horse wagon will haul 4000 feet of lumber nine miles in a day of 8¼ hours. This is equivalent to nine tons and gives the horse all that is coming, with some to spare.

Has Call Over Horses.

One of the Potter tractor trailers has hauled a 10-ton load to Woonsocket, R. I., a distance of 16 miles, has returned unloaded and repeated the stunt. It has thus hauled 20 tons 64 miles in a day. On this basis it would take about 30 horses to do the work of one of the trailer outfits. Which speaks fairly well for the trailer.

In hauling to contractors loads must be taken through ruts and gulleys and often over unbroken ground. Horses find the going a trifle beyond their depth in this work frequently and have been known to suffer injury, in addition to

4½ Miles on Gallon of Gasoline.

E. H. Potter, head of the company's distribution department, estimates that the big carriers go four and a half miles on a gallon of gasoline. He says they are light on oil, each traveling a day on a quart and a half pint.

The long-leaf yellow pine, the only product the company deals in, comes from the southern states. Most of it is shipped by water and the company yards are conveniently situated on the Providence river at the head of Narragansett bay. Its wharf is admirably equipped for fast unloading. The lumber that comes by rail is also quickly in place, a spur track running into the yards. The derricks aid in this work.

In addition to its tractor-trailers the company also has a lighter and 14 horses in its delivery service, and frequently ships to distant points by rail. Two double wagons and several single vehicles are used for short deliveries, with a number of horses always in reserve. The lighter delivers lumber along the bay, some for mill and dwelling construction and considerable for wharf building.

SOUTHERN MOTORS BUILDS.

The Southern Motor Manufacturing association, Ltd., Houston, Tex., has broken ground for the erection of two additional units to its plant on the Houston ship channel. The new buildings will add 69,330 square feet of floor space to the present plant. Two units, one for tractors, are already in operation on the plant site, as well as two temporary units in Houston proper.

One of the new structures will be of sawtooth steel construction, 121x480, and will be employed in producing Ranger Light Four passenger cars. The other, 75x150, of similar construction, will be Southern Motors warehouse No. 1.

NEW STEWART TRAILER.

The Stewart Tractor Co., Waupaca, Wis., has designed a trailer to be used with tractors and the new vehicle is already in production. It is built with drawbars fore and aft, so that they may be used singly or in trains. The coupling is designed to provide automatic trailage for trains in making curves. The new trailer will be offered to the trade alone, or with the Stewart tractor. It will be manufactured in quantities.

TRUCK TERMINAL A WINNER.

The ship-by-truck terminal at Kansas City, Mo., handled over 400,000 pounds of freight for suburban points from its establishment June 1 up to the middle of August. It reaches suburban centers and farming communities within a radius of 75 miles. Truckers operating out of the station are charged 20 per cent. of their freight bill for its use.

A. G. HERRESHOFF RESIGNS.

A. G. Herreshoff has resigned as chief engineer of the Bethlehem Motors Corporation, Allentown, Pa.



Platform Semi-Trailer Body Used by Potter & Co., Being Hand Loaded at a Stock House—Practically All Heavy Lumber Is Loaded with Power Derricks.

provides that not over 10 tons can be carried and the Potter loads reach that mark frequently and would go further if it could be done legally. The lumber carried runs in length from 10 to 60 feet and the largest are 16 by 16 inches. The length of the Knox tractor-trailer varies from 12 to 50 feet.

Yet a surprising and productive attribute of these haulers is that they can be turned around in a space but six inches greater than their own length, which cannot be done with trucks.

Truck salesmen keep plugging away at the Potter concern hoping to sell it a fleet of trucks, but the company maintains that the tractor and semi-trailer system is the thing for its business. In fact, to cope with a rush the concern sometimes hires a certain pair of trucks of a well known and high priced make. When boards of the length sometimes called for by customers have been piled on one of these vehicles the front wheels have gone in the air and have required some effort to get them down. For ordinary lumber lengths the trucks meet every requirement, but in hauling timber 60 feet long they must bow to the

falling down on the job. Again they have refused to back into the positions most suitable for the unloading of lumber. Either the truck or tractor-trailer can be easily maneuvered wherever desired.

Go Nine Miles an Hour.

The tractor-trailers are not as slow as might be supposed. The Potter units travel between nine and 10 miles an hour, their speed naturally being accelerated by the fact that they go light one way, return loads being a rarity. They average between 45 and 50 miles, which is all that is expected from many trucks.

The mileage covered is helped by quick loading and unloading. High derricks are stationed here and there all over the Potter yards. One of these derricks can lift 1000 feet of lumber into the trailer at one time. Four or five of these lifts and the vehicle is loaded. Usually the semi-trailers are loaded at night for a start at 7 in the morning. Only one driver is used on each vehicle and they work nine hours for five days and until noon on Saturday. Occasionally the driver is not back at the end of the regular nine-hour day.

LOUISVILLE TRUCK DEALERS MAKE "MOTORIZE-THE-FARM" TOUR

THIRTY trucks, a Byron four-wheel trailer and a complete Silent Alamo Farming Lighting System, a motorcade valued at over \$135,000, on Aug. 21 completed in Kentucky one of the most impressive and successful "Motorize-the-Farm" tours ever held south of Chicago. The tourists covered 350 miles and visited 20 towns.

A detail of each branch of the United States service, the army, navy and marine corps, was on the tour. The army sent along, mounted on a motor truck, one of the mammoth searchlights used in France to locate enemy airplanes flying over the lines at night. There was a jazz band along, a company of high class entertainers, and a moving picture outfit.

E. M. Baker, a practical farmer, who has made a close study of power farming, and other lecturers, were on hand to amplify the demonstration of the capability and economy of the truck given by the vehicles in actual operation.

The following trucks were in the caravan: Columbia, Federal, Service, Mack, Master, Indiana, Dodge, Ford, Commerce, Ace, Triangle, Packard, Republic, Armleder, Day-Elder and Wilson.

The itinerary follows:

MONDAY, AUG. 16.

LaGrange—Sulphur—Bedford.

TUESDAY, AUG. 17.

Campbellsburg—Newcastle—Eminence—Shelbyville—Lawrenceburg.

WEDNESDAY, AUG. 18.

Salvisa—Harrodsburg—Perryville—Danville.

THURSDAY, AUG. 19.

Junction City—Lebanon—Springfield.

FRIDAY, AUG. 20.

Bardstown—New Haven—Hodgensville.

SATURDAY, AUG. 21.

Elizabethtown—Shepherdsville—Louisville.

Jazz Band and Movies.

The event was under the auspices of the Louisville Truck Dealers' Association, Inc. J. E. Dawkins, Jr., was train

commander. Mayor Smith and his aides gave the starting signal for the run out of Louisville, Aug. 16. In every town visited elaborate arrangements had been made for the reception of the party. Band concerts, entertainments and addresses were given at each and where the stop was in the evening the motion picture machine got busy, grinding out a three-reel farm film in the open.

While no individual advertising was allowed and selling was strictly banned, the tour itself was extensively press-agented through newspaper stories, window cards, road signs and hand bills in order that every farmer in the territory covered would be on hand to see just what the truck could do to solve his problem as to the most dependable and economical medium of producing and marketing his crops.

Trucks Haul on Farms

The trucks were each equipped with a type of body especially designed for some particular kind of farm hauling.

The demonstration consisted of hauling wheat and hay from the field, carrying farm supplies over plowed ground and hauling live stock from the farms to town.

To impress the fact that the "motorize-the-farm" tour was purely an educational project, Edward J. Hackett, president of the Louisville Truck Dealers' association, presented each dealer participating in the tour with a large button bearing legend, "No Selling Permitted."

Any dealer found guilty of attempting to solicit business at any time during the progress of the tour would be forced to withdraw his truck.

The River road was selected as the route from Louisville to Lagrange, the first stop of the tour, to boost the proposed River road highway between Louisville and Cincinnati. Arriving at Lagrange at 10 o'clock the trucksters were escorted to the court house square by a local committee. After a programme

of jazz music and entertainment Mayor Jacob Duncan welcomed the visitors and introduced E. M. Baker, who talked on modern motorized farming. The trucks then carried the crowd out to a nearby farm, where a demonstration was held. Leaving Lagrange at 12:30 the caravan went to Bedford, stopping at Sulphur for half an hour en route. At Bedford there was a short programme of music and speaking and then the trucks drove out to the Stanley farm for a demonstration. Three trucks were assigned to carry wheat to Madison, Ind., 10 miles away over very bad roads to show the time saved by trucks as compared with horses and wagons.

The tourists spent the night here and a big night meeting was held, including a band concert, short talks by Judge James Strother and E. M. Baker, moving pictures and a demonstration of the big army searchlight.

Leaving Bedford Tuesday morning the truck train stopped at Campbellsburg and New Castle and then at Eminence. There were demonstrations at Harrodsburg after lunch the motorcade proceeded to Shelbyville for another demonstration and then on to Lawrenceburg, where the trucks were parked for the night.

On Wednesday Salvisa, Harrodsburg, Perrysville and Danville were visited. There were demonstrations at Harrodsburg and Danville and at the latter place there was a big night meeting, starting at 7:30 on the square.

The first stop Thursday was Lebanon, where demonstrations on the Rankin and Wathen farms took place. The tourists then went to Springfield. Another demonstration was held here and also a night meeting at 7:30.

Friday they made Bardstown, New Haven and Hodgenville and Saturday Elizabethtown and Shepherdsville, arriving in Louisville in the evening and completing their 350-mile "motorize-the-farm" tour.

AMUSEMENT COMPANY TO MOVE EQUIPMENT BY TRUCK.

The Robinson-Jennings Amusement Co., which is this season operating in several northwestern states, uses about 75 tons of paraphernalia, which it hauls on 1½-ton trucks, 24 machines being required whenever the company changes its location. This equipment is of the general character used to entertain the public and must be so designed that it may be quickly assembled and disassembled. The length of the hauls vary.

Mr. Robinson of this company stated to the officers of the Napoleon Motor Truck Co., at Traverse City that truck transportation was the quickest and best it has ever had. Were railroads depended upon the company would have numerous idle days and its revenue would be seriously reduced, but with trucks equipped with pneumatic tires the

highways can be used whenever desired and the schedule that will be most productive is adhered to. The amusement

company is seriously considering standardizing on Napoleon trucks the coming year.



Part of a Train Carrying the Paraphernalia of the Robinson-Jennings Amusement Co., Making a Northwestern Tour Independent of Railroads.

EXPRESS SERVICE DEVELOPMENTS

SYRACUSE CONCERN SERVES 40 TOWNS AND CITIES BY DAILY TRIPS

Central New York Motor Transport Lines, Inc., gives daily service to over 40 towns and small villages around Syracuse, N. Y., in addition to the terminals at Watertown, Oswego, Utica, Cortland and Geneva.

Watertown is the most distant point reached daily, being 69 miles. A side trip to Lacona is included on this trip. A 2½-ton Selden truck, equipped with large pneumatic tires, averages 150 miles daily on this haul and does it at the rate of between 30 and 35 miles an hour, the roads being excellent.

The next longest run is to Ithaca, 65 miles from Syracuse. This truck also makes side trips occasionally. Trucks frequently get full return loads and seldom have less than a 50 per load on the back trip.

This company has taken merchandise for points 250 to 350 miles distant, transferring the goods to other companies operating out of the terminal towns. While the charge to distant points is about the same as express, the service is far superior. The company is incorporated for \$100,000 and is a highly successful institution.

The organization began two years ago with one truck and now has eight, including two 2½-ton Seldens and four 1½-ton Seldens. All are equipped with pneumatic tires all around.

CHICAGO-DANVILLE EXPRESS.

The Chicago, Kankakee, Watseka & Danville Motor Truck Co. has been organized with \$100,000 capital and has put 10 trucks in daily operation between Chicago and Danville. The trucks will run over concrete road all the way, the Dixie highway between the two cities having been recently completed. Edward Reginier, one of the incorporators, will be general manager.



One of the Five-Ton Pierce-Arrow Trucks of the Stillwater Worsted Co., Harrisville, R. I., That Make Semi-Weekly Trips of 185 Miles to and from New York City.

WATER FREIGHT RATES UP.

Substantial freight and passenger rate increases effective not later than Jan. 1 have been granted by the United States Shipping Board to all American steamship lines plying between ports on the Atlantic and gulf coasts and between Atlantic and gulf ports to Porto Rico, the Canal Zone and the Virgin Islands, with the exception that freight increases do not apply to the Virgin Islands. The latter vary from 10 to 40 per cent.

The lines operating on the Great Lakes are also granted increases of 40 per cent. over present freight rates. The Interstate Commerce Commission has granted a request from the railroads that they be allowed to make the increase but 30 per cent. in domestic rates and 25 per cent. in export rates in order to stimulate grain shipments by water, the crop being too voluminous to handle by all rail.

The general increase in freight rates is also made applicable to lighterage, storage, floating, reconsignment, switching and weighing and transmission services.

MESSAGE OF TRUCK TOLD TO DRY GOODS RETAILERS.

The National Retail Dry Goods association at its convention this month in Philadelphia, heard the gospel of truck transportation preached by George P. Wilson, commissioner of transportation of the Philadelphia Chamber of Commerce. He urged the use of waterways for the carrying of slow-moving freight and the development of highways for motor carriers, pointing out that these policies would quickly relieve freight congestion at railroad terminals.

The Automobile Association of London, England, has prepared a map showing the location of 600 agents throughout the country who will register the local requirements of manufacturers and traders in regard to return loads for their commercial motor vehicles.

TEXTILE COMPANY'S TRUCKS MAKE 185-MILE TRIPS SEMI-WEEKLY

With the textile business again approaching normal the Stillwater Worsted Co., Harrisville, R. I., has resumed its plan of sending two trucks from the factory to the New York salesroom of the company twice weekly. The distance one way is 201 miles. The trucks used are five-ton Pierce-Arrows and the average load is 5½ tons, 22 tons being hauled to the Metropolis in a week.

While three days are allowed for the run both ways, the truck shown in the accompanying picture recently went from Harrisville to New York, fully loaded, in 15½ hours.

Ordinarily the trucks leave Harrisville at 6 a. m. and stop at Bridgeport between 4 and 5 p. m., putting up for the night. During the following day the truck goes to New York, unloads, gets a return load when one is to be had, and is back in Bridgeport for the night. The trip from Bridgeport to Harrisville is readily negotiated the next day. Two drivers are used on each truck on these trips.

N. Y. TRUCKERS ORGANIZE.

Organization seems to be the aim these days for the trucking interests of New York city, two new bodies being formed late last month. One of these is the Ship-by-Truck Association and the other a unit of the National Haulers' Association. A movement is now under way to combine the two as the New York branch of the National Commercial Haulers' Association of the United States. L. C. Frazer of California, a director of the national organization, is in New York city spreading organization propaganda.

23 IN TRAILER ASSOCIATION.

The Trailer Manufacturers' Association of America, which was organized in March, 1919, with 14 charter members, now has 23 of the leading trailer manufacturing concerns of the country in its membership. Five new members were admitted in May and the Reliance Trailer & Truck Co., San Francisco, has just been added to the roll. The association has headquarters in New York city. A meeting of the organization will be held in Cleveland, Sept. 2 to which all active trailer manufacturers will be invited.

NIXON SEES BUSES ABROAD.

Public Service Commissioner Lewis Nixon of New York city is back from London and Paris, where he studied bus transportation. He sees a big need in America for omnibuses, but does not favor allowing them to compete with trolley lines.

OF PLANT AND SALES PERSONNEL

MARTIN U. S. TRUCK EXECUTIVE

The U. S. Motor Truck Co., Cincinnati, O., has appointed J. J. Martin as assistant to the vice president and also to have charge of the special sales work of the company. The new executive has had valued experience in the same line of work with the Federal, Stewart and other leading truck concerns. He was a commissioned officer in the Motor Transport Corps during the war and was but recently discharged.

KIP, GENERAL MANAGER.

The George D. Bailey Co., Chicago, service division for Shafer Roller Bearings, has engaged Frank C. Kip as general manager. He will have full charge of sales and advertising. He was formerly president of the Automotive Products Corp., California, and has also been sales promotion manager for the Packard Motor Car Co.

L. M. FIELD FRESNO BRANCH.

The L. M. Field Co., Inc., western headquarters at San Francisco announces the organization of a \$100,000 branch company at Fresno to handle its lines in that district. The company distributes Selden trucks, Jackson cars and trucks and the Atlas delivery wagon.

ORCHARD IN NEW POST.

Thomas P. Orchard has been appointed director of sales with the Arthur Knapp Engineering Corp., New York city and Detroit, Mich. He was formerly secretary and sales manager of the Service Engineering Co., Inc.

A. S. WARD PROMOTED.

The Timken-Detroit Axle Co. has appointed A. S. Ward assistant manager of the service division. He has been with the organization four years and has won rapid advancement.

B. R. WINBORN RESIGNS.

B. R. Winborn, general manager of the jobbing division of the Standard Parts Co., Cleveland, O., has resigned and concluded his duties on Sept. 1.

RUTTER GOES INTO BUSINESS.

E. E. Rutter, who has been with the Timken-Detroit Axle Co. 11 years, has resigned and will engage in business for himself.

DAVEY BACK TO BETHLEHEM.

Roy S. Davey, who resigned as sales manager for the Bethlehem Motors Corp., in June, has resumed his former post.

SHANNON, WORKING 2500-MILE

TRIP WITH TRUCK IN 60 DAYS FOR WAGER

Harold T. Shannon, advertising manager of the Oneida Motor Truck Co., Green Bay, Wis., always says what he means and is always ready to back his assertions. When he told the Green Bay Association of Commerce that he could reach the Pacific coast in an Oneida truck in 60 days and make the truck earn all the expenses, someone dissented, and Mr. Shannon proceeded to make good. The Oneida is now on its way.

Accompanied by John Arens, a member of the common council of DePere, Wis., Mr. Shannon started the first of the month, the two leaving without a cent of money and with but one gallon of gasoline. The truck will necessarily stop frequently and do hauling jobs in order to earn its own keep, as well as that of the two travelers. A clause in the agreement forbids the same job being done twice.

The route for the journey has not been entirely selected, but after leaving Wisconsin the truck goes to Dubuque, Ia., then to Minnesota and then across the two Dakotas.

BRUSWITZ RELIANCE HEAD.

The Reliance Motor Truck Co., Appleton, Wis., has appointed A. G. Bruswitz president and manager. The new president has been a stockholder and director since the company was formed and was formerly county highway commissioner.

WILLIAMS IN KALAMAZOO.

D. B. Williams, who was at one time in charge of the commercial car division of the Chevrolet Motors Co., in New York city, has been appointed advertising manager of the Handley-Knight Motors Co., Kalamazoo.

BECKMAN WITH ARMLEDER.

The Armleder Motor Co., Cincinnati, O., has named J. W. Beckman, formerly in charge of publicity for the International Motor Co., New York city, maker of Mack trucks, to be advertising manager and also assistant sales manager.

SELLING EATON AXLES.

William D. Horne, Jr., has joined the Eaton Axle sales force of the Standard Parts Co., Cleveland, O. He was formerly with the Locomobile Co. at Cleveland, O.

GREEN SELLS OLDSMOBILES.

C. E. Green, formerly with the King Motor Co., New Orleans, has been placed in charge of the truck department of the Gulf Oldsmobile company, that city.

F. H. MILLER SALES MANAGER FOR HARE'S MOTORS OF N. E.

Fred H. Miller has been appointed general sales manager of Hare's Motors of New England by President R. J. Gilmore, with whom Mr. Miller was formerly associated in the Packard Motor Car Co., New York City. Mr. Miller was Metropolitan district manager at that time. He has been special representative of Hare's Motors and has recently been in the South.

NEW JACKSON ENGINEER.

The Jackson Motors Corporation, Jackson, Mich., has named Cory P. Green as factory superintendent and chief engineer. The new appointee has been identified with the General Motors Corporation and has had experience in foreign automobile factories. The Jackson Motors Corporation is making expansion plans and is going along on high.

BUY U. S. ESCORT WAGONS.

Tom Etheridge has resigned as truck sales manager for the Citizens Auto Co., San Antonio, Tex., and has become associated with a group of San Antonio business men headed by Frank A. Wine-rich in the purchase of the entire supply of United States standard escort wagons from the quartermaster at Chicago.

LOCOMOBILE PLANT CHANGES.

E. L. Larson, works manager of the Locomobile Co. plant at Bridgeport, Conn., has appointed C. H. McCarter as general superintendent of Locomobile plant, with N. C. Aument as manager of the parts department. J. R. Stine has been made car superintendent and J. Burns machine superintendent.

JACKSON GETS PETERSON.

The Jackson Motors Corporation, Jackson, Mich., has secured Carl H. Peterson as general superintendent. He was recently superintendent of the axle division of the Olds Motor Works, Lansing, Mich., and had previously been with the Locomobile and Studebaker companies.

HYATT SALES ENGINEER.

A. F. Bassett has been appointed sales engineer for the Hyatt Roller Bearing Co., for Detroit, Mich., and surrounding territory. He will be with the motor bearings division. He is a graduate engineer of Yale university.

COLLINS ON NEW JOB.

The Non-Ferrous Casting Corp., Chicago, has engaged B. W. Collins as general manager and vice president. He was formerly sales manager of the Parker Axle Co., New York city.

ROAD BUILDING AND DEVELOPMENT

WHEEL IMPACT TESTS SHOW PNEUMATIC TIRES WEAR HIGHWAYS LEAST

Sufficient tests have already been made by investigators for the Bureau of Public Roads, United States Department of Agriculture, to show that increased speed of a vehicle equipped with hard rubber tires tremendously increases the impact which its wheels make on the roadway where there is any unevenness. Tests have been made at five miles an hour and at 15 miles an hour.

On the other hand where pneumatic tires are used increased speed adds comparatively little to the impact. It has been suggested that these tests will be of great value not only in settling questions of design but may also lead to a rational basis for determining license fees for motor vehicles. Trucks have been used in these tests varying in size from a one-ton truck up to a 7½-ton truck carrying an excess load.

A number of paving slabs were tested and a surprising difference found in the strength of the different types of pavement. The relative wearing qualities of these pavements have also been tested and the resistance to wear by brick, stone and concrete determined. A chance to compare grout and asphalt fillers for both brick and stone block is furnished by this investigation. Sub-grade materials are also being tested.

GOOD ROADS IN ARGENTINE.

The good roads movement has attained concrete form in the Argentine Republic through the organization by a group of merchants and capitalists of Argentina, the United States and Great Britain of the Good Roads Association of the Argentine Republic. The organization will be conducted on a non-political basis and permanent executives will be retained to carry on a campaign of education.

\$40,000,000 FOR CANADIAN ROADS.

The Canadian government has approved plans for the expenditure of \$40,000,000 to improve the highways of Ontario and Quebec. The proposed outlay in Ontario is \$22,200,000, of which the province will contribute \$12,000,000, the government \$6,800,000 and the municipalities \$4,400,000. Quebec is to expend \$17,390,000, of which the government will furnish \$5,000,000.

400 WAR TRUCKS TO IOWA.

From excess war material the government has turned over to the State of Iowa 400 trucks, a score of tractors, 60 touring cars and miscellaneous material. Practically all of the trucks have been distributed to counties for use in highway work.

GOV. SLEEPER BOOSTS TRUCKS AND GOOD ROADS.

Gov. Sleeper of Michigan knows the value of good roads. In a recent address he estimated that Michigan's annual share of the tourist business is \$150,000,000. He put the harvest from tourists in Florida at \$500,000,000. He said that good roads had helped to make Michigan lead the world as a center for the manufacture of automobiles.

Gov. Sleeper forecasted a great future for the truck and predicted that it would win substantial recognition in relieving railroad congestion within the next year. He spoke of the part the truck played in handling Michigan's farm produce this year, declaring that much of this produce would be rotted in the fields had motor trucks not been available.

UNIVERSITY TO STUDY HIGHWAY CONSTRUCTION PROBLEMS.

The University of Maryland, eight miles from Washington, D. C., has established an engineering experiment station for the purpose of undertaking the special study of highway construction problems. This action was taken at the request of the U. S. Bureau of Public Roads and the State Roads Commission of Maryland. Arthur Newell Johnson, consulting highway engineer for the Portland Cement association, Chicago, and one of the nation's best known highway engineers, will head this work as director of engineering research and dean of the college of engineering. He assumes his new duties Oct. 1.

ROAD BUILDING RECORD.

Alan Jay Parish, an Illinois highway contractor, established a world's record on June 30 when with a 21-E Smith Simplex paving mixer he laid 744 linear feet of concrete pavement, 16 feet wide and eight inches thick. This was part of a \$1,500,000 contract on the Danville-Marshall highway near Paris, Ill.

COURSE ON HIGHWAYS.

A series of graduate short period courses in highway engineering and highway transport will begin at the University of Michigan, Ann Arbor, Mich., Dec. 8, and continue until March 25. Each course will last about two weeks and every angle of automobile and highway construction will be treated.

RECORD ROAD CONTRACT.

What is claimed to be the largest single road construction contract ever awarded in the United States was recently made in Texas, the contract calling for the construction of 150 miles of hard surfaced roads and 50 miles of graded roads in Eastland county under a bond issue of \$4,500,000.

WILSON MAY BEGIN WORK ON NEW YORK--NEW JERSEY VEHICLE TUNNEL

The first earth in the construction of the New York and New Jersey vehicular tunnel will be turned with formal ceremonies on Columbus Day, Oct. 12. President Wilson, members of the cabinet and the governors of the two states will be asked to attend. There will be a parade to which there will be a strong military flavor. The New York tunnel commission announces that it has approved the contract forms for the sinking of the first shaft, which will be sunk in the vicinity of Canal and West streets.

PRIORITY TO ROAD MATERIAL FOR OHIO CONSTRUCTION.

The Ohio Utilities Commission has ordered all railroads in that state to give priority to the transportation of road building material and machinery for highway improvement. Cars must be assigned forthwith so that orders for such materials may be filled. This action was taken at the behest of the Ohio Highway Commission, which maintained that the welfare of the state was involved.

DO YOU PAY A "MUD TAX?"

In their campaign to put across a 12-year \$80,000,000 road building programme the good roads advocates of Alabama have adopted the slogan: "The heaviest tax the farmer pays is the mud tax." The farmers are being shown that good roads benefit them in a dollar-and-cents way.

ONE ORDER FOR 60 TRUCKS.

The Consumers Co., Chicago, Ill., dealer in coal, crushed stone, sand, cement and other building materials, does not do business on a small scale, judging by a recent order for 60 Mack trucks of 7½ tons capacity. These trucks are already in service and are hauling average loads of nine tons.

GOOD ROADS ENGINEER.

A. E. Loder has been appointed district engineer of the United States Bureau of Public Roads in charge of South Carolina, Georgia, Florida, Alabama, Mississippi and Tennessee, with headquarters at Washington, D. C.

WAR TRUCKS TO CALIFORNIA.

California has received from the War Department 688 motor trucks, 54 large touring cars and 21 ambulances, valued at \$2,000,000, for use in its road building program. The equipment will be overhauled.

SEEN FROM MANY VIEWPOINTS

PHILADELPHIA FIRE DEPARTMENT RAPIDLY MOTORIZING.

The city of Philadelphia still has 98 horse-drawn fire fighting machines but 25 of these will be replaced by motor-driven vehicles before the end of 1920 and all will give away to the more modern apparatus within 12 months. The city has a total of 204 machines.

Director Cortelyou states that 25 pieces of motor-driven apparatus are to be delivered to the city before January 1, 1921. Contracts for this number of machines were let some time ago and the director said deliveries will commence in October and continue at intervals during the succeeding months.

"It is our aim to motorize the entire department as soon as possible," Director Cortelyou said. "The day of horse-drawn fire-fighting apparatus has passed and it is our aim to replace such equipment as rapidly as practicable."

CONVENTION IN CAROLINAS.

Officials of the National Automobile Chamber of Commerce, George M. Graham, vice president of the Pierce-Arrow Motor Car Co., A. R. Kroh from the demonstration department of the Goodyear Tire & Rubber Co., and Paul Fitzpatrick, vice president of the General Motors Acceptance Corp., are among the speakers due to address the first annual convention of the Carolinas Automotive Trade Association at Greensboro, N. C., Sept. 24-25.

TRUCKS INCREASE BUSINESS.

The Cook County Paper Stock Co., Chicago, has standardized on Garford trucks, which have so expedited the movement of stock that the business has been vastly increased and with resultant profits. The company now uses six six-ton Garfords and soon expects to operate one of the largest fleets in the city. In fair weather trailers of eight-ton capacity are hooked to the trucks.

IMPACT TESTS DELAYED.

The Road Impact Tests planned to be held at Columbus, O., starting Sept. 1, under the direction of Prof. T. R. Agg, chairman of the National Research Council, were postponed to a later date due to unforeseen circumstances which prevented completion of the gasoline consumption apparatus in time.

IDAHO TRADESMEN UNITE.

The Idaho Automotive Trades Association has been formed in southern Idaho and headquarters are to be established at either Twin Falls, Boise or Pocatello.

COMMERCE DISTRIBUTOR.

The Harold L. Buck Co. has been appointed distributor of the Commerce truck in Saginaw and Flint, Mich.

TRUCK IS COMBINED POWER PLANT AND TRANSPORT FOR MOVIE MEN

Combining a power plant that insures whatever light is necessary to do the best practical work and a transport with which the camera operators and their equipment are carried to and from their works, a White truck chassis equipped with a special body has been found to be a very large economy, both of time and labor, by the Collins Studios Co., Cleveland, O.

This concern specializes the production of moving pictures for commercial purposes and its operations are in a large zone of which Cleveland is the center. To fill engagements a considerable part of the time of the men was taken in travel and movement of the equipment was also a substantial item of expense. In addition to this the work was in widely variable conditions so far as light was concerned.

There was need for the photos being made at all times of day and night and one essential was good illumination. After considering the possibilities of business and the equipment that could be practically used, decision was reached to purchase a truck chassis and equip it with a special body and a high powered electric generator which would generate all the energy that would be required for making photos, with the necessary apparatus.

The main object was to insure adequate light, no matter what the subject of the picture, whether interior or exterior, and the intention was to have what would fully illuminate an apartment, an auditorium, a part of or an entire part, a parade or a spectacle. But in addition to this was the fact that a crew could be reduced from six to two men.

One of the first tests of the apparatus was making moving pictures of a night pageant staged by the students of the Western Reserve University at Cleveland, which with the usual equipment

would have required preparation extending over a considerable period, especially with reference to lighting effects. Another test was when pictures were made of the meeting of a board of directors at a Cleveland hotel. "Our engine generated as much electricity as the entire hotel used," said A. Copperman, technical expert of the Collins company, "and had we been compelled to 'borrow' the energy from the hotel it would have been without light while we were making the picture."

"When we go into factories to make pictures our independence of outside sources of power is an actual aid in production, for instead of stopping some of the machinery to divert current while we are operating, all the machines can be driven with our own generator in use."

"Now we are staging a picture at an old farm house that is lighted by lamps. Without the truck we could not do this work because of lack of illumination."

DOUGLASS DISTRIBUTOR PURCHASES PARTNER'S INTEREST.

C. A. Rogers and John Rudd of the Rogers-Rudd Truck Co., Colby, Kan., which concern has been handling the Douglass truck in that territory, have dissolved partnership. Mr. Rogers has purchased his partner's interest and will conduct the business alone.

TRUCKS IN PHILIPPINES.

The Philippine Islands promises to be a growing market for motor trucks. In 1919 a total of 516 machines, valued at \$788,540, were imported. The increased demand is attributed to an improvement of roads through a good roads movement instituted by the government.

TRUCK SHOW AT WORCESTER.

Worcester, Mass., dealers are planning a show for the spring when trucks and open cars will be exhibited. A display of closed models will be held this fall.



White Truck Equipped with Special Body and Generator to Afford Independent Lighting, Used by Commercial Moving Picture Concern at Cleveland, O.

NEW DISTRIBUTORS AND AGENCIES

KELLY-SPRINGFIELD KANSAS CITY BRANCH IN NEW QUARTERS.

The Kelly-Springfield Motor Truck Co., formerly of 1829 McGee street, Kansas City, Mo., is in new quarters at 1604-8 Locust street. The sales and service departments will be under one roof, the new building having 15,000 square feet of floor space. P. W. McGuire, treasurer of the company, superintended the removal. The Kansas City firm is a factory branch.

WHITE HICKORY DISTRIBUTORS.

The White Hickory Motor Corporation, Atlanta, Ga., has appointed Frank Cutter eastern distributor for White Hickory trucks, his territory comprising New York, New Jersey, Connecticut, Delaware and Eastern Pennsylvania. Edward E. Gerlinger has been named Pacific coast sales and advertising director. Charles J. Turpie has been selected to distribute in the states of Tennessee, Georgia and Florida.

SELLS CARS, TRUCKS, TRACTORS.

The Jones Motor Co. has been formed at Houston, Tex., with a capital stock of \$50,000 and will take over the business of the South Texas Truck Co. The company has the state agency for the Kissel car and truck and the agency for South Texas for the Holt Caterpillar tractor and the Mack truck.

DEALER'S HOUSE ORGAN.

The Winerich Motor Sales Co., San Antonio, Tex., distributor of Republic trucks, Cletrac tractors and Willys-Overland cars in the southwest Texas territory, is issuing a house organ, the snappy nature of which is attested by the name, the "Peptomist."

LA FRANCE TRUCKS IN DETROIT.

The Ward La France motor trucks will be distributed in the Detroit territory by the Moore-Wright Sales Co., Detroit. The members of the firm are: W. L. Moore and Charles E. Wright, both formerly associated with the Gordon Motor Sales Co.

HANDLING GOODYEAR SALES.

The Goodyear Tire & Rubber Co., Akron, O., has named C. A. Cramer, former branch manager at Omaha, Neb., as manager of tire sales for the Minneapolis branch, covering also St. Paul, Duluth, Fargo, Minot and Sioux City, Ia.

NASH TRUCKS IN OKLAHOMA.

The King Motor Co., Paul's Valley, Okla., has secured the building formerly occupied by the Boston Motor Co., and has opened a sales and display room for Nash cars and trucks.

ONEIDA DEALERS MEET.

The Oneida Motor Truck Co., Green Bay, Wis., held its first annual dealers' convention at the factory Sept. 1-2, 12 major business meetings being held during the three days. Addresses were made by leading officers of the company and by men nationally known in the industry. The Oneida Indians on the Oneida reservation at Green Bay staged a tribal council of war for the visitors and a big barbecue followed. Among those in attendance was John Krohn of New York city, designer of the Oneida electric trucks.

President Lafayette Markle, Factory Manager F. M. Bogart, Service Manager R. E. Widrig, Chief Engineer Henry Schaefer and Assistant General Manager M. E. Johnston addressed the distributors and dealers, as did Alfred Reeves, general manager National Automobile Chamber of Commerce; B. M. Pettit, Goodyear; Tom Snyder, secretary Indianapolis Chamber of Commerce; E. E. Parlin, economic expert, Curtis Publishing Co.; A. R. Kroh, Goodyear; Reed L. Parker, Lord & Thomas.

NEW SANFORD DEALERS.

The Sanford Motor Truck Co., Syracuse, N. Y., has established the following new agencies:

Kyle Garage Co., Belle Vernon, Pa.
Georgia Motor Co., Augusta, Ga.
United Tire Co., Montgomery, Ala.
Dixie Garage, Columbus, Miss.
Clayton J. LaRash, Baltimore, Md.

NEW TRUCK SALES STATION.

Warming Motor Co., Burlington, Ia., distributor of Republic, Nash and White trucks, is erecting a modern structure to care for its expanding business. A. P. Warming is president and C. H. Warming secretary and treasurer of the company.

ROBERTS BACK IN ST. LOUIS.

W. S. Roberts, who relinquished his post as manager of the J. I. Case Threshing Machine Co., St. Louis, to become distributor of Reo cars and trucks at Kansas City, has returned to St. Louis as president and treasurer of the West Side Buick Auto Co.

TO SELL TRUCKS AND TRACTORS.

The Hankins Sales Co. has been established at Oswego, Kan., and will sell trucks and tractors in addition to Chevrolet cars. P. E. Hankins of McCune, Kan., is in charge.

NORTHWAYS IN ALBANY.

The Northway Motor Sales Co., has opened an office at 24 James street, Albany, N. Y., for the distribution of Northway trucks in that territory. Dr. R. Bean is in charge.

NEW FWD DISTRIBUTORS.

The Four Wheel Drive Auto Co., Clintonville, Wis., has engaged five new distributors for FWD trucks within a month. The Lambert-Jones Motor Co., Oklahoma City, Okla., has been given a territory embracing Oklahoma and a part of Texas. The Ballard Tait Sales Co. of Brunswick, Ga., will cover the greater part of that state. The Rennoc Sales & Service Co., Philadelphia, Pa., will distribute FWD'S in Delaware and portions of New Jersey and Pennsylvania, while the Talbot-Miller Motor Co. of Baltimore, Md., has contracted for the entire State of Maryland, excluding three counties. Manbeck & Suloff are new distributors at Mifflin, Pa.

MACK BRANCH READY SOON.

Work is being rushed on the new building of the Mack Truck Co. at Minneapolis, Minn., where the northwest headquarters will be established. The new structure is on University street, between Hampden and Pillsbury streets. The present Minneapolis office will be closed when the new building is completed. Joseph Donnelly is the northwest manager.

NEW INTERNATIONAL AGENCY.

The Union Truck & Storage Co., Jackson, Mich., has taken over the distribution of International trucks in that territory. F. D. Havens is in charge of distribution. A new building is to be erected at once as a modern sales and service station. It will provide 15,000 square feet of floor space.

TO DISTRIBUTE NASH TRUCKS.

The S. V. Nash Co. has been organized at Sheboygan, Wis., with \$25,000 capital to deal in Nash cars and trucks, automotive equipment, supplies, etc. The incorporators are Arthur Schraut, John Von Der Voort and Robert Temill.

GARY SOUTHERN AGENCY.

The southern agency for the Gary truck has been taken by the Boulet Motor Truck Co., New Orleans, operating the Boulet Transfer System. C. E. Patton will be in charge of distribution.

NEW KISSEL BRANCH.

The Jones Motor Co. of Texas, distributor of Kissel cars and trucks in that territory, with headquarters at Houston, has opened a branch at El Paso, with W. J. Farthing in charge.

GRAVES STEWART EXECUTIVE.

The Stewart Motor Corporation, Buffalo, N. Y., has appointed G. M. Graves, a former Pierce-Arrow man, as assistant sales manager.

NEW PIERCE-ARROW TRUCKS EQUIPPED WITH DUAL VALVE ENGINES

AFTER practically nine years' production of a five-ton truck chassis and nearly five years' production of a two-ton truck chassis, the Pierce-Arrow Motor Car Co., Buffalo, N. Y., has discontinued these and is now building what may be regarded as refinement of the designs in two, three and one-half and five tons sizes. The company is also to build a tractor, but the tonnage rating of this has not as yet been stated.

The Pierce-Arrow trucks are practically to the same design, the only difference in the chassis being in the dimensions of parts, save that the brakes of the two-ton unit are internal expanding within drums on the rear wheels, while with the others the service brake is external contracting on drums on the main driving shaft directly back of the transmission gearset cases, while the emergency brakes are internal expanding within drums on the rear wheels.

As contrasted with the original designs one will note that many changes have been made. This does not mean that the first trucks are not all they were represented to be, or that they are not high quality, long lived, dependable units. The new machines embody all that has been established by years of service and engineering experience to be necessary and desirable in power trucks, yet nothing has been adopted that has not been satisfactorily proven.

Radical Change in Power Plant.

The power plant, for instance, is a radical change, this being a four-cycle, four-cylinder, T-head, water-cooled type, with a separate head, having 16 valves, there being two intake and two exhaust valves for each cylinder. This engine is practically the same in general characteristics that has been used for two years in all Pierce-Arrow passenger cars, and has been proven in long continued experimental work. This engine differs from the original design in many respects. It is claimed to be particularly economical of fuel and to be productive of power at low speeds because of the long stroke.

The power transmission system is also different. It includes a multiple dry disc clutch instead of a cone clutch, this having an unusually large contacting surface area, a selective sliding gear transmission gearset having four forward speed ratios and reverse, which is suspended amidships, and a full floating rear axle that is constructed with a new type worm shaft and worm wheel which is claimed to be considerably higher in power transmitting efficiency than the original design.

Worm Axle of High Efficiency.

This is not criticism of the type of worm shaft and wheel formerly used, but, according to the statement of the company, "the worm gear represents the highest attainable efficiency under the severe requirements for commercial vehicles where small loss of power, light weight, low replacement cost, large gear reduction and minimum of attention are all of great importance."

The summarized specification of the three chassis show the following:

	2-Ton	3½-Ton	5-Ton
Wheelbase.....	12 ft. 6 in.	13 ft. 6 in.	14 ft.
	15 ft.	16 ft. 6 in.	17 ft.
Chassis Overall.....	16 ft. 6 in.	20 ft. 1½ in.	20 ft. 7½ in.
	19 ft.	23 ft. 1½ in.	23 ft. 7½ in.
Speed, solid tires.....	18 m. p. h.	18 m. p. h.	14 m. p. h.
Speed, pneumatic tires.....	23 m. p. h.	22 m. p. h.	
Engine cylinder bore.....	4 in.	4½ in.	4½ in.
Engine cylinder stroke.....	5½ in.	6¾ in.	6¾ in.
S. A. E. H. P.....	25.60	25.60	32.40
R. P. M.....	300-1600	300-1350	300-1200
Tires, front, single.....	36 by 4 in.	36 by 5 in.	36 by 5 in.
Tires, rear dual.....	36 by 4 in.	36 by 5 in.	40 by 6 in.

Engine Has Longer Stroke.

Probably the greatest change in design is in the engine, which has been made with longer stroke, and this considerably increases the horsepower. The two-ton engine, for instance, while rated at 25.60 horsepower, will, it is claimed, develop 35, while the larger engine will produce 60 horsepower at 1200 revolutions. This is the governed engine speed for solid tires, but it is increased to 1350 revolutions for pneumatic tires.

The engine cylinders are cast on bloc, instead of pairs, this affording greater rigidity, but there is the same space be-

the ignition distributor and starting motor, when the chassis is equipped with electric lighting and starting systems, and these obviate the need of a dust pan beneath the engine. The support arms are integral with the upper section of the case.

The lower section increases in depth from the forward end to the rear, with a horizontal plate separating the crank chamber from the oil reservoir, while the oil pump is mounted on a removable plate in which is a drainage plug. Both the upper and lower sections have forward and rear extensions that house the



A Pierce-Arrow Five-Ton Truck Chassis with Dual Valve Engine, Electric Lights and Steel Wheels, and End Discharge Contractor's Body.

tween the second and third cylinders as in the original design, so that the center main bearing is longer than in conventional practice and greatly stiffens the crankshaft. The engine is a T-head, with the inlet valves at the left side and the exhaust valves at the right. The head is a separate casting and it is retained by studs and nuts and is easily removable for cleaning or valve grinding. Each cylinder has two spark plugs and petcocks for testing and priming. The valve stems, springs and tappets are enclosed by cover plates retained by wing nuts, and the valve adjustment may be made by removing these plates.

The cylinders are cast with the water jacket integral, and the intake is at the base of the jacket, while the outlet is between the first and second cylinders, so there is a flow of water across the combustion heads.

Crankcase Is Cast Aluminum.

The crankcase is cast aluminum, the upper section being deeper because the stroke has been lengthened, and at either side the flange has been extended to form seats for the water pump and generator.

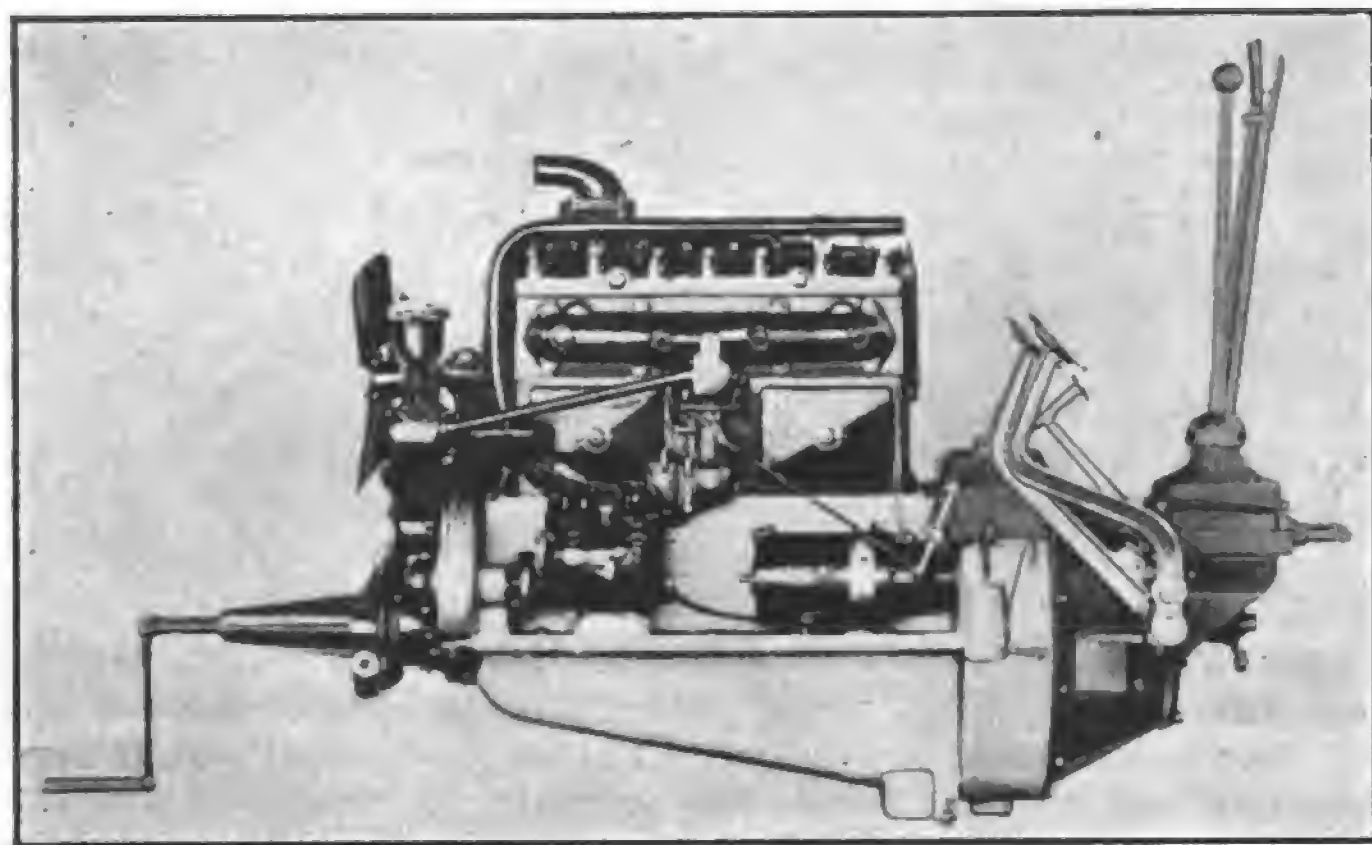
timing gearset and the flywheel. The engine is mounted forward on a trunnion on a frame cross member, while the rear support arms are placed on fabric pads on steel brackets on the frame side members, with long bolts with stiff springs that retain the arms and allow frame distortion without cramping stresses upon the engine case.

The crankshaft is a three-journal type with large journals and crankpins, and the camshaft is forged with the cams integral. The connecting rods are 1 section steel forgings with unusually large big ends. The main and the crankpin bearings are bronze, with white babbitt metal linings, and the camshaft bearings are bronze.

Cooling and Lubricating Systems.

The engine is cooled by a circulation of water through the cylinder jacket and a vertical finned tube radiator with cast top and bottom tanks forced by a centrifugal pump driven from the timing gearset. The radiator is mounted on fabric pads on the frame side members and retained by a bolt and spring at either side that absorbs stresses upon the

radiator case. The circulation of water is controlled by a thermostat in the outlet manifold on the cylinder head that is enclosed and requires no adjustment



Inlet Side of the Pierce-Arrow Dual Valve Engine, Showing Delco-Pierce-Arrow Distributor, Starting Motor and Governor.

after assembly. The thermostat prevents the circulation of the water until a specific temperature is reached, and then the water is circulated until it is cooled to a degree that closes the valve. The fan is mounted on an adjustable roller bearing in a bracket carried on the forward end of the crankcase and is driven by a flat belt. The belt tension is compensated by an eccentric adjustment.

The engine is lubricated by a full force feed system, the oil being driven from a well in the reservoir through two filtration screens by a geared pump and forced through a manifold to the main crankshaft bearings, the camshaft bearings and the timing gearset, and from the main bearings through a drilled channel in the crankshaft to the crankpins and thence to the wristpins. The cylinders, piston and cams and valve tappets and valves are lubricated by the lubricant thrown off by the centrifugal movement of the crankshaft. The oil passes through the pressure gauge on the dash under observation of the driver.

Ignition and Engine Auxiliaries.

The ignition current is supplied from a storage battery and through a Delco-Pierce-Arrow system that includes an ignition unit with two distributors, two sets of contacts and coils that are synchronized to produce two sparks simultaneously in each cylinder. As two spark plugs are used there is quicker and more certain combustion. The generator charges the storage battery and supplies the lamps, and the battery supplies the energy for the starting motor. The generator is located back of the water pump and is driven through a flexible coupling, this obviating all stresses upon the armature shaft. The pinion of the starting motor engages with an external ring gear on the periphery of the flywheel. The shaft of the ignition unit is mounted on annular ball bearings and there is little probability of wear. The storage battery is mounted on rubber pads and is located under the driver's seat.

The governor is an independent centrifugal throttling type that is operated by the inlet camshaft gear and all levers and connections are enclosed. The governor is sealed, but is accessible should adjustment be necessary. Statement is

made that the engine will give the greatest power with minimum fuel consumption at the maximum governed speed. If the governor is removed the speed may be increased, but the tractive effort on low gear is not increased nor can a steeper grade be ascended.

The clutch is mounted on the flywheel housing and it consists of seven driving and six driven dry discs. It requires no attention, being practically self-compensating, aside from lubricating the throw-out collar. The gear shifting and emergency brake

levers are mounted in a housing on the clutch case. The shaft between the clutch and the transmission gearset is coupled to the clutch and the main gearset shafts by flexible fabric couplings.

The transmission gearset is a selective sliding gear type and is mounted in a case suspended at the forward end by a trunion and at the sides by pins swiveling in eyebolts attached to a heavy frame cross member. All gears and shafts are large and the shafts are carried on annular ball bearings. The gears are alloy steel, are large and heat treated. The drive for the dash odometer is attached to the right side of the case and is driven by spiral gears enclosed and running in oil.

The Rear Axle Construction.

The main shaft between the transmission gearset and the rear axle is tubular and is coupled with Hooke type universal joints enclosed in steel housings. The rear axle housing consists of a central section which is closed with a cover plate on which is assembled the worm shaft, worm wheel and the spur gear type differential gearset. The outer sections of the axle are steel tube that are shrunk and pinned. On the outer ends of these tubes are the bearings on which the road wheels are mounted. The tubes are heat treated alloy steel and carry all the load. The forged steel brake supports are bolted to flanged sleeves that fit and are bolted to the axle housing. The axle shafts are heat treated steel and are splined at either end, one end fitting the differential gear and the other the driving plate bolted to the flange on the steel wheel hub. The wheels are secured to the axle tubes by locking nuts. The

worm shaft and worm wheel are mounted on large annular ball bearings, self-aligning bearings taking the driving stresses. The axle is lubricated by oil from the bowl that is carried in a trough cast integral in the worm shaft casing to both the thrust and radial bearings. The differential gearset bearings are submerged in oil. The front axle is a steel drop forging that has heavy steering knuckles.

Frame and Spring Suspension.

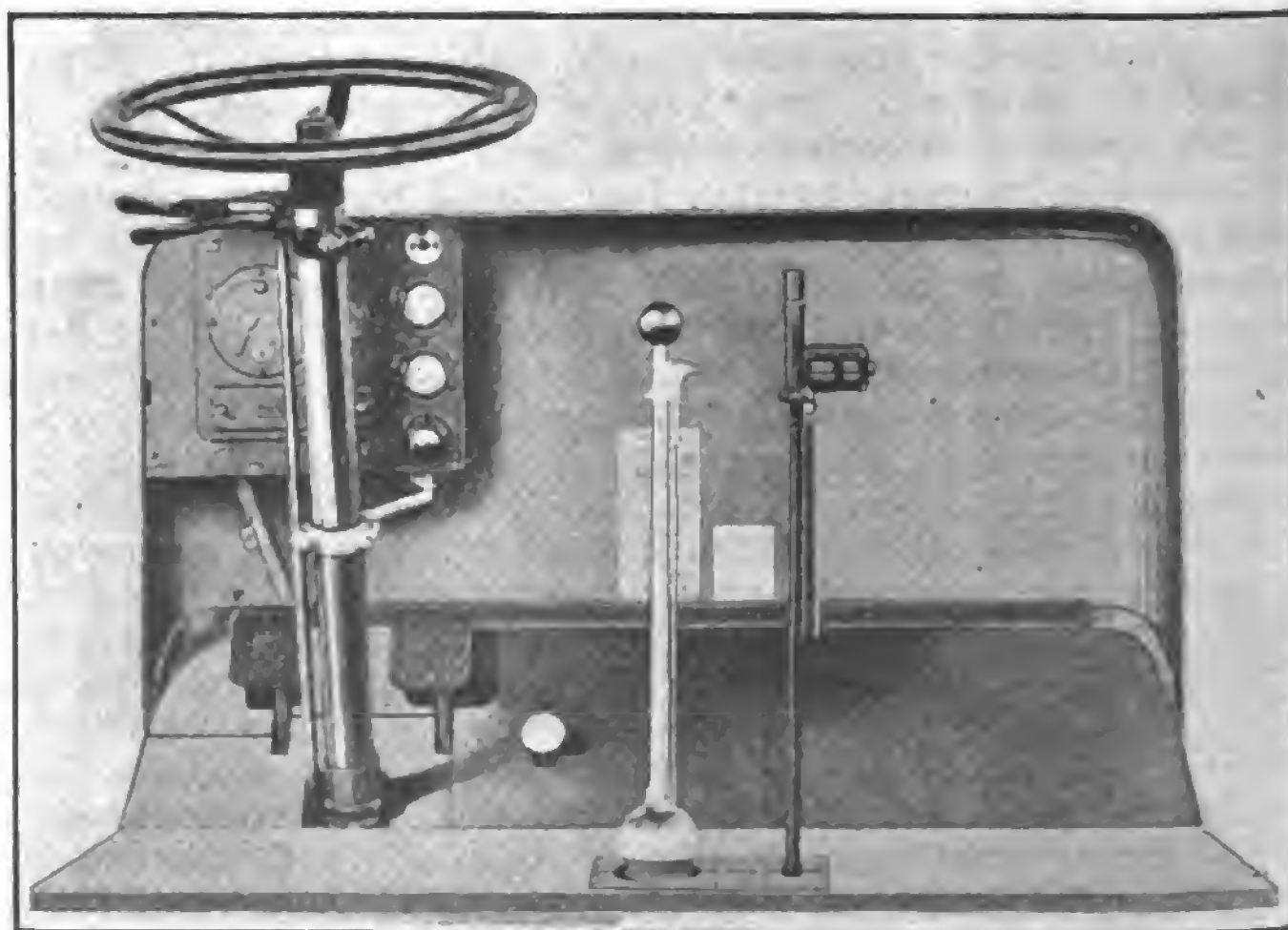
The frame is a heat treated pressed steel channel section that is tapered at the forward end. Brackets that carry the bumper and the forward ends of the front springs are at the front ends of the side members. There are four cross members, one directly forward of the radiator, one under driver's seat, one is the rear support for the transmission gearset case and the other at the rear end. The member carrying the driver's seat has large gearset plates that extend beyond the frame and support the gasoline tank and battery box.

The frame is suspended on long semi-elliptic springs that are banded that are members. The rear springs are tied by cross rods mounted in brackets bolted to the frame side secured to the axles with heavy clips and extra long nuts. The driving stresses are taken by forged steel torque and radius rods, brackets on the side members carrying the rod to which torque arm is shackled and the forward ends of the radius rods. The rear ends of the radius rods and the forward end of the torque arm are mounted on ball and socket joints.

The Control and Brakes.

The steering gear is a semi-reversible screw and nut type and is at the left side. The column is braced to the dash by a heavy bracket. The steering arm is a nickel steel forging held by a large cottered nut on the taper squared end of the spindle of the housing. The drag link is fitted with hardened steel ball sockets that are fitted with springs to compensate wear and absorb shocks.

The control is well arranged, the clutch and service brake pedals and the foot accelerator being grouped at the base of the steering column, with the ignition and throttle levers on the column below the wheel. The gear shifting and emergency brake levers are at the center of



Dash of Pierce-Arrow Truck, with the Panel Containing the Fuse Box and Control Instruments, and the Speedometer at Right of the Emergency Brake Lever.

the foot board. On the dash in a panel is the fuse box, the ignition and light switch, the ammeter, oil gauge, the primer and the hand pump for the gasoline pump. The odometer is separately mounted on the dash. The dash is a single piece steel stamping cowed at the top and sides.

The brakes are very large and claim is made that the braking area of each set is unusually large and efficient. The service brake shoe is operated on a drum 12 inches diameter and six inches wide, and it is equipped with an equalizing device to insure uniform pressure on the drum. The drum is cooled by internal ribs. The rear wheel brakes are equalized and the drums are flanged to have resistance to distortion. All levers are fitted with hardened steel bushings and pins and adjustment is afforded by wing nuts that automatically lock and are very accessible. All the wheels are annealed cast steel with the hubs cast integral with the spokes. The hub caps are stamped steel. The wheels are mounted on large taper roller bearings.

The seat is furnished with a lazy back, and a cab top of heavy gauge steel over a wood frame with a glass windshield are extra equipment. The cab includes half doors with upper and back curtains.

The regular equipment includes electric head lamps with auxiliary lamps and electric tail lamp, license plate brackets, driver's seat, front fenders and running boards or steps, transmission driven odometer, hand operated horn, steel tool box, tool box, tool kit, jack, supply of spare parts, cans of engine oil and grease, an Alemite grease gun and connector tube, skid chains and body sills attached to the frame. The electric starter is an extra.

SENATOR CAPPER HEADS MISSION ON TRUCK UTILITY.

United States Senator Arthur Capper of Kansas, who is the publisher of a number of farm papers, headed an expedition which left St. Louis, Mo., Aug. 22, and which spread the gospel of truck and tractor utility throughout the southwest during a fortnight's tour. The banker was one of the principal objects of attack. Secretary F. W. Fenn of the Motor Truck Committee of the National Automobile Chamber of Commerce, Inc., and 20 automobile advertising men were included in the party of 30. In addition to bankers, farmers, dealers and distributors were seen.

TRUCK BUSES PRESERVE HEALTH OF SCHOOL CHILDREN.

The adoption of motor transportation for hauling children to school in the rural districts is being widely extended. H. K. Dye, president of the Consolidated School Board at Macedonia, Ia., contends that not only do the two Republic trucks used for this purpose keep the attendance normal during the stormy season, but they lessen the cases of illness caused by exposure to rough weather.

The Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis., has issued a 28 page catalogue giving a complete description of the Oshkosh 2-ton four-wheel drive truck.

MILWAUKEE PERMITS FASTER SPEED WHEN TRUCKS HAVE PNEUMATIC TIRES

The Milwaukee common council has put into effect a new ordinance regulating the capacity, load, speed, dimensions and equipment of motor trucks, tractors, trailers and wagons, in which trucks with pneumatic tires are favored. The new ordinance is based largely on the provisions of similar measures in effect at Philadelphia, Cincinnati and other cities.

Trucks with pneumatic tires are allowed to operate at 15 miles against 12 for those traveling on solids. The maximum gross weight of vehicle and load combined upon any one axle must not exceed 24,000 pounds. The length limit is 30 feet, and, with trailer, 70 feet. The maximum width, except when loaded with hay, straw or other loose material, is 115 inches. The limit allowed on a square inch of tire is 400 pounds.

Other provisions are that every truck must be equipped with a speedometer; undergo weekly inspection of brakes; carry the name of the owner or operating concern on both sides, with distinguishing number for fleets.

The ordinance, which was approved by the Milwaukee Automotive Dealers' association, the Motor Truck Drivers' union, the Transportation Association of Milwaukee, and fleet owners, is regarded as a model of its kind. The results will probably influence similar regulation in other cities especially near Milwaukee.

POLICEMAN SAYS TRUCK SPEED WAS 40 MILES AN HOUR.

E. A. Erfft, salesman of the Napoleon Motors Co., Traverse City, Mich., was recently held up by a police officer, who claimed that he was driving a 1½-ton Napoleon truck at the rate of between 35 and 40 miles an hour. Quite a compliment!

NEW STANDARD MODEL I-K ONE-TON TRUCK.

The Standard Motor Truck Co., Detroit, Mich., has begun the commercial production of a new one-ton truck which is known as model I-K, which is regarded as being one of the best examples of power truck engineering. For years the company has produced trucks built from standard construction units, these being assembled with extreme care to obtain an unusual excellence, and the new machine has been highly perfected.

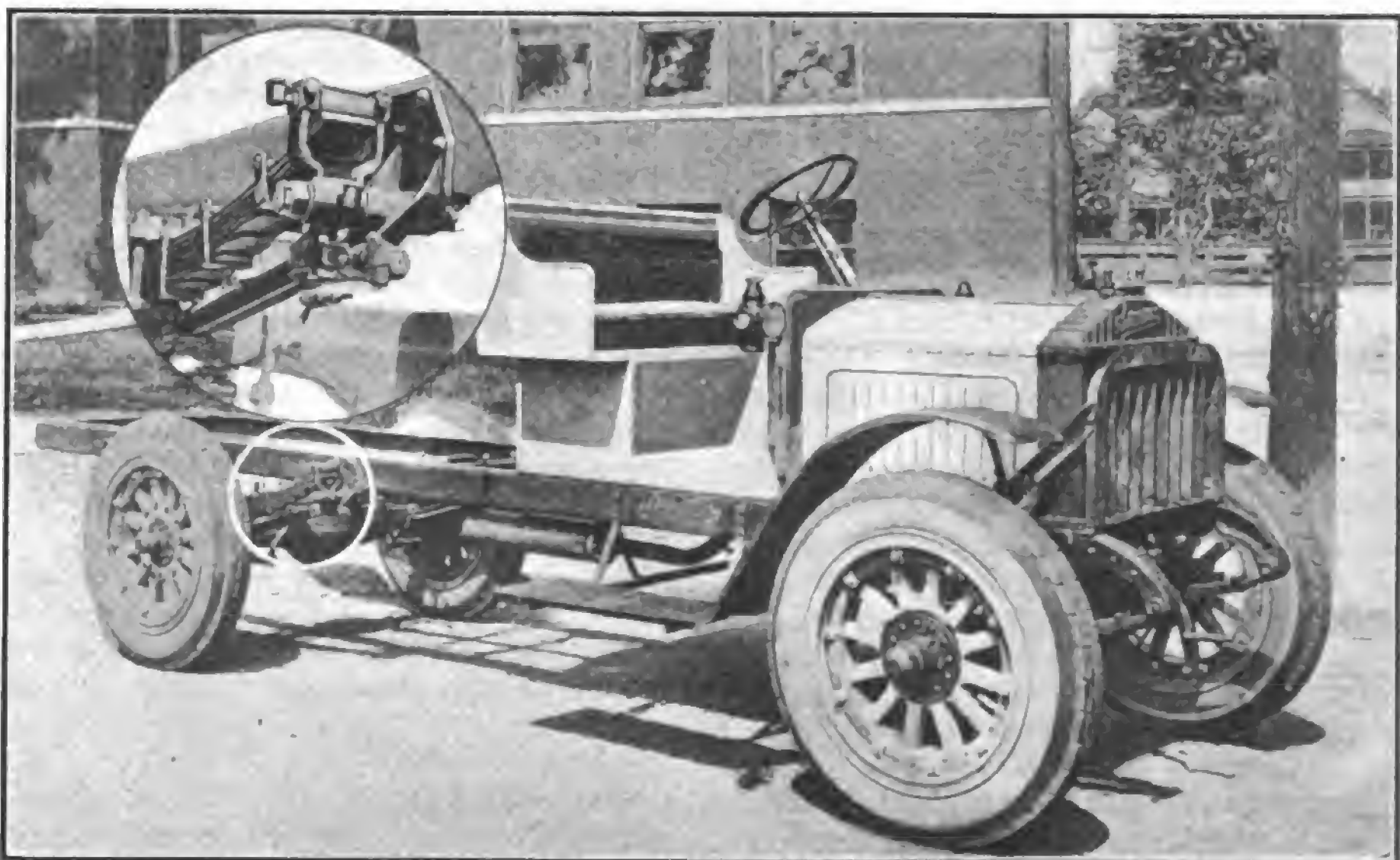
The same high grade units are included in the chassis, among these being Continental model N engines, Brown-Lipe multiple disc clutch and transmission gearset having three forward speed ratios and reverse, Spicer universal joints, Timken semi-floating worm shaft and worm wheel rear axles, Ross steering gears, Long radiators, Eisemann magnetos and Stromberg carburetors.

The springs are semi-elliptic and the rear set is shackled at both ends, the driving and braking stresses being taken by radius rods. Much care has been taken in designing the radius rods, so that they may be compensated for wear by tightening a single bolt in each rod. The pivot pins at the forward ends of the rods are lubricated by easily accessible oilers.

The details of the chassis assembly are the same as for the other Standard machines and statement is made that the factors of safety are very large. The model I-K chassis is equipped with pneumatic tires.

ADMITS TRUCK SUPERIORITY.

The meeting of inland waterways and water transportation experts at New Orleans, La., in August, brought forth the admission that the waterways freight system cannot compete with motor truck haulage. It was agreed that the latter can be operated more economically, run faster and kept on better schedule.



The New Standard Model I-K One-Ton Truck Chassis, the Inset Showing the Detail of the Spring Mounting and the Radius Rod Adjustment.

Truck Cost Records Valueless Unless Complete

State Distributor for Three Machines
Tells Why He Lost Faith—Accuracy Is
Vitaly Essential to Owners—Guessing
As Practical as Use of Incomplete Data

A STATE distributor for three nationally known trucks burst a bomb shell in our midst the other day with the announcement that he did not believe in cost figures.

When our mental equilibrium was restored we naturally queried: "How Come?"

When we pinned him against the wall Mr. Distributor qualified his declaration. He believes in properly kept cost figures, but maintains that such an animle never has come within his ken.

"I'm against cost figures," he maintained, "because in my experience I have never seen any that told the whole story. The truck gets either the best or the worst of it. The worst usually."

Then the man who supplies three good selling trucks to all the buyers in an entire state went on to cite an instance. He surely proved his case as far as this particular citation goes. When the cost to him of improperly kept records on this occasion are appreciated one who did not realize how much the keeping of cost figures means to the future of the industry might pardon him for his detour from the path of progress. We say "detour" because we think he'll be back on the main highway with the rest of the gang before long.

Mr. Distributor had sold two trucks to a well known firm which was bound to get a fleet in a short time. This concern also had one or two trucks of other makes. After his pets had been on the job about 45 days he figured that their worth had been thoroughly tested and went to the company's office with writing pad, contracts and all the equipment for a big repeat order.

And he got it!

At the historical point where the squab got the wood-chopping utensil.

He noticed that there was neither band nor reception committee to greet him. The big man of the firm finally gave him audience. The latter had little to say, his actions telling the visitor that he got off at the wrong station. The manager pulled over a big book. It was nicely bound and cost real money. The pages were handsomely ruled, the black and red ink forming effective harmony.

And Figures Never Lie.

You won the gauzy gonfalon! 'Twas a book in which cost figures were kept.

Yes, and it proved beyond peradventure that Mr. Distributor's truck was an archaic, one-horse wagon that could not

haul for peanuts. All of its doings were painted in black. The other two trucks in service got all the red ink.

The totals took the wind out of Mr. Distributor's sails. His truck was a poor third. He barely had breath enough left to ask for a look at the figures. He knows the truck business and it did not take him long to find the joker. The records were unusually complete along certain lines. When the driver had "ham and" instead of "pork and" for dinner, the figures plainly recited the fact. There was a host of small details that might well have been overlooked.

But—

Two of the biggest and most important items in the life of a truck were entirely omitted. These were tonnage and mileage. No record was kept of how many miles a truck traveled a day or how heavy the loads it hauled. Mr. Distributor's trucks might have gone 70 miles and hauled 40 tons against a rival vehicle's 35 miles and 20 tons. It was all put down as one day's work and the two treated alike in the charges for gasoline, oil, depreciation, etc.

It was all so ridiculous that Mr. Distributor laughed right out loud at the manager's pretty book, with its nicely ruled lines, beautiful blend of red and black ink and the other accoutrements.

For which he got:

An invitation to go forth and sell trucks somewhere else. Which he did. He has sold a lot of trucks, but has never forgotten what cost figures cost him in this case and he's off them for life, so he thinks.

Meanwhile the firm which figures in the story has standardized on a truck of another type. It happens that it hit on a good truck, of which the company now has six. They are going strong and here's hoping that the manager has amended his figures so as to give the truck credit for work actually performed.

Inaccurate Truck Records.

The question which naturally crops up before the house at this point is, are most truck cost figures inaccurately kept?

Modishly clad in fig leaves the chorus troops on the stage and shouts: "They are."

Why?

Simple as A, B, C.

Truck owners, many of whom have \$50,000 and more invested in trucks alone, do not take truck cost accounting seriously.

Why not?

Here is where we hedge. Why they don't is a deeper mystery than the Elwell case. Any other concern which has \$50,000 or more invested in a business makes the probing of the cost of operation its first consideration. No business can be run right without a knowledge of the cost of conducting the business.

It isn't business.

MOTOR TRUCK is a firm apostle of cost figures. It would like to see Mr. Distributor back in the fold. To that end an invitation is extended to any of its readers who have profited through the keeping of cost figures to send in the data telling where and how it was done. In this connection the exact facts and figures showing the saving are solicited so that there may be no doubt in Mr. Distributor's mind that an honest job was done. Forms on which the records were kept should also be forwarded.

Within a week the writer has talked with two men in the general trucking business who do not keep cost figures. One has 10 trucks. The other nine. Both had the same reason why they do not figure their trucking costs.

They never "got to it."

One added that it took all his own time to oversee the business. It took another man's time to serve as dispatcher. The third office employee, a girl, has to hump to keep track of how much money comes in, how much goes out, who pays and who does not pay. The other man has the same number of office employees, one a sort of a foreman or dispatcher and the second a girl bookkeeper. Both appear prosperous, but both are sick and tired of the trucking business and are going to give it up "some day."

There's a reason.

These men lack the most important essential of their business. Just one more office employee, who might be secured for half the price of a truck driver, would solve the riddle. She could keep the right kind of cost figures, let the trucker know just where he is at during all hours of the night or day, and take a big burden off his shoulders. Properly directed for a short time she could make the life of a general truckman one round of pleasure.

Guess at Service Rates.

These truck operators are in the same city. Naturally neither can know just what to charge for service. One guesses at it and the other follows his lead. Both

strive to make their rates attractive and to that end keep mighty close to railroad transportation figures. Both are making some money, but one extra girl at a low salary could tell either of them just what his trucks are costing to run and exactly how much he should charge. With the hit-or-miss, catch-as-catch-can rates eliminated and a proper charge made for service a big part of the strain would be shunted from the mind and body of these two truckmen and their profits would be on a mounting scale.

Why He Standardized.

One of these men has standardized on a certain truck. Not because this truck is cheaper to operate. He knows nothing, except in a general way, of its virtue in this regard. He fixed on this type because of its ability to stand up under hard usage. This is a splendid attribute. But if another truck could stand up as well, or nearly as well, and be operated at a greatly reduced cost the latter would be more economical and bring richer returns.

The second man has six different types of trucks in service. When he adds a truck to his fleet he buys from the dealer or distributor who has given him the best service in recent months. The man's truck may be no good and that may be the reason the dealer has had opportunity to give service. It may use up more

gasoline and oil without carrying the loads or covering the ground of some of his other trucks. Service is a fine thing, but it doesn't even up for a mediocre product. It stands to reason that if this truck owner kept cost figures he would know which one of his several makes has given him the best result and could standardize on that type to his own financial advantage.

Simple Cost System Best.

There is just one thought from all this which the writer wishes to drive home. That is the stressing of the simplicity feature in all cost systems as applied to trucks. Experts have given owners, whether in the general hauling business or not, a confused idea on the subject. In their desire to show the benefit of their researches and, incidentally, why they are called "experts," they have infused into the cost situation many details which could be chopped out without harm. A cost system that tells the story in a nutshell is the one that will have the full swing one of these early days, when all trucking men will get down to brass tacks and decide that the time has come when they must learn something about how much money it takes to run their own business.

There must be something radically wrong when general truckers who have all the business they can attend to go to

the wall and when motor express lines which haul record volume of freight are sold on sight to the first bidder.

When the simple expedient of keeping cost figures is admittedly the cure for these ills men engaged in trucking—most of whom are normal on all other points—must finally awake on the side where their bread is buttered.

Reasons for Cost Records.

There are so many reasons why truck owners should keep cost figures—most of which have been published ad infinitum—paper is so precious, and the weather is so warm that the writer will not delve into them at any depth, but will content himself with offering the following reasons for cost records, as recently outlined by the Firestone Ship by Truck Bureau:

1. To fix rates.
2. To detect leaks and suggest opportunities for economies, and to determine the relation of overhead to operating expenses and to net revenue.
3. To estimate trucking costs in comparison with cost of transportation by teams, train or boat.
4. To check the performance of trucks, tires and other parts of the equipment.
5. To be able to assist government agencies in drafting and promulgating sound, constructive laws and regulations, when such assistance is desired.

EMERGENCY TRUCK HAULING AIDS BLACK & DECKER CO.

The Black & Decker Co., Baltimore, has been obliged to put its fleet of Service motor trucks in long distance emergency hauling in order to keep its plant operating at full speed. It has found that the cost of this service is as low as railway express rates and will be lower when the increased express rates go into effect.

In order to secure small electric motors for its drills and air compressors, the Baltimore concern has been running trucks between its factory and Ft. Wayne, Ind., carrying drills and compressors westward and motors eastward.

TRUCK WORKS NIGHT AND DAY.

The Skagit Construction Co., Lynden, Wash., has a Duplex four-wheel drive truck which breaks all union rules by working both night and day. Three other Duplex trucks owned by the same concern do excellent work, but they do it all during the day. The particular one referred to above hauls cement all day, 124 sacks to a load. By night it hauls a 16-inch rooting plow. Its repair bill for the year has been below \$10.

NEW HOTEL AT BUCHANAN.

Traveling men and visitors to the Clark Equipment Co.'s plant at Buchanan, Mich., will learn with pleasure that Buchanan now boasts a brand new hotel, where first class hotel accommodations are furnished at reasonable rates. The new Hotel Rex contains 27 rooms with baths and is under the management of W. D. Bailey.

TRAFFIC OFFICERS FAIL TO ADOPT UNIFORM CODE AT CONVENTION

The National Traffic Officers' Convention at San Francisco wound up Aug. 20 without any agreement having been reached regarding a uniform traffic law. Much was done, however, toward that end, delegates present from practically every state in the Union and from Canada pledging themselves to work for the adoption in both countries of whatever law is finally decided upon.

A special committee has taken the entire matter under consideration and will present its findings at a meeting of the executive committee at Cleveland, O., Dec. 2. There were so many suggestions made that it was felt that all could not be coordinated without months of effort. It was deemed inadvisable to rush blindfolded into any action which might be regretted later.

Robert W. Martland, secretary of the California Automobile Trades association, is chairman of the special committee, the other members being W. H. Maltbie, Baltimore; Percy Towne, San Francisco; David Van Schaack, Hartford; E. W. Braun, Chicago; David R. Faries, Los Angeles; Dr. Clayton Sharp, New York; J. E. McCurdy, San Mateo, and J. B. Monohan, San Francisco.

Lieut. Daniel A. Sylvester, head of the San Francisco Traffic Bureau, was re-elected president. Chicago won in the contest for the next convention, defeating Buffalo and Minneapolis.

When completed the new uniform traffic code will be offered to every state

legislature with a view to universal adoption. It is anticipated that the present conflictory regulations will then go into the waste basket, where they belong.

EXPORTS AND IMPORTS.

Exports of the United States to the principal countries of the world during July totaled \$651,381,827, an increase of \$82,694,312 over the corresponding period last year, according to the Department of Commerce figures announced today. Imports for the month amounted to \$537,170,351, an increase of \$193,424,281 over July, 1919.

For the first seven months of this year exports totaled \$4,899,254,121, compared to \$4,626,109,266 in 1919, while imports totaled \$3,481,938,379 compared to \$1,954,257,362.

Imports from Germany during July totaled \$10,436,022, compared to \$291,166 last year, while exports to that country reached \$28,025,621, compared to \$2,426,742.

TRAILER INDUSTRY BOOMS.

The trailer industry is looking for increased business as a result of the increase in railroad freight rates. The call for trailers has not diminished appreciably during the financial stringency, the few cancellations being offset by increased orders.

Trailer men figure that the increased use of the motor truck means a bigger demand for trailers. The extra tonnage without a resultant increase in gasoline consumption is a point that is being stressed in favor of trailer usage.

SELL BUYER TRUCK BUT ONCE, ADVISES O. M. VETT

"The price is always the man in the wood pile in selling a truck," said O. M. Vett, who has been up hill and down dale in the truck selling game, "and there is just one bit of horse sense I want to hand out to the beginner and that is to only sell a truck once."

Asked as to "how he got that way," Mr. Vett elucidated.

"I sat in the other day when a new-comer on the sales staff of the state distributor of a well known truck was trying to make a sale. His man was buying his first truck and what interested him more than anything else was the price.

"The salesman had been through the kindergarten for beginners, one of the first lessons of which is to keep away from the price as long as possible. This is a good rule in the long run, but there are occasions when it breaks down. This often happens with a first truck buyer, who generally makes price paramount."

"Our hero hedged and back-fired, but

was finally forced out in the open and told his man what the truck chassis would cost. The prospect had a hazy idea of truck construction and he took it for granted that figure given was the sum for which he could buy a fully rigged vehicle. The price looked right and he was all ready to sign on the dotted line when the salesman began to add on the cost of freight."

Then he had to sell the truck all over again, with this item added.

Did the salesman get the whole story off his chest at this juncture? He did not.

Instead he mentioned the war tax. Then—after long argument—he sold the truck for the third time.

Was he through? Not by a jugful.

The buyer learned in order that a body, a hoist and a cab all cost extra money. The salesman sold the truck three more times, making six in all, but—

He had to throw in his commission at the end to put over the deal.

The interviewer wanted to know how the job should have been done?

"Naturally the salesman could not give a price," said Mr. Vett, "until he knew what size of truck was wanted and what kind of loads it was to carry. The real salesman always has the war tax, the freight, the cost of cabs, bodies and hoists stored away in his cranium. Break the sad news in a bunch, is my motto.

"When it was settled that the man wanted his truck to haul coal, for instance, the salesman should have been ready with something like this:

"Our 1½-ton truck, completely equipped, with pneumatics in front, lights, mechanical horn, tools, jack, enclosed cab, all-steel dump body and hydraulic hoist, with war tax and freight included, comes to just 36-40 (\$3640).

"This might have staggered his man temporarily but he would have to make the sale but once instead of six times, and he would also have his commission check as a souvenir of the event."

MAGNETIC CRANE EQUIPMENT FOR TRUCK HAULING SCRAP METAL.

What is the first truck equipped with a magnet crane is now in use at Detroit, Mich., it being built to special order for H. Kramer & Co., that city, by the Union Motor Truck Co., Bay City, Mich. Magnet cranes have been used for a number of years in mills, factories and shops where large weights must be moved or handled and have been found extremely efficient and economical from the fact that minimum labor is necessary and the objects moved are never insecure so long as they are within the limitations of the crane.

These cranes are of different types, some being mast and boom with a wide radius of operation, which are best adapted for yard service, and others are mounted on or suspended from rails on which the mobile carriages can be moved. Some of these cranes have large

capacity and are specially designed, while others are constructed to commercial needs and are sold as standard equipment.

The magnet crane can only be used for handling iron or steel, and the magnet is usually energized by a current of electricity from a power circuit or a power plant. The idea of using a magnet crane on a truck originated with Kramer & Co., which deals in scrap metal, a considerable part of which is iron and steel, to economize time and labor, and the equipment was built especially for the truck.

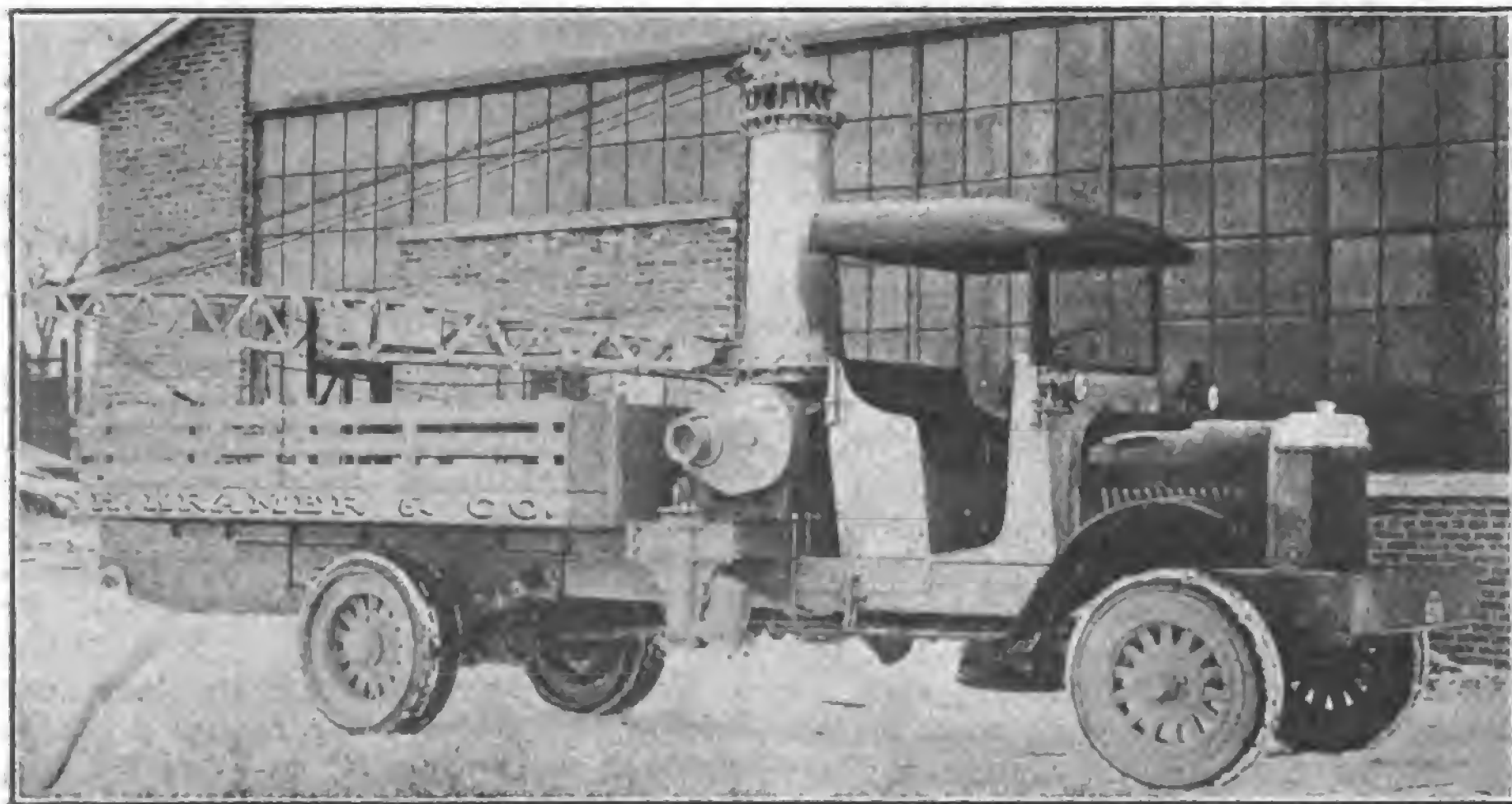
The crane truck is very complete, for it is so constructed that it may be used for a diversity of work. The electric energy is generated by the engine, which drives a generator, but there is a power take-off on the transmission gearset case which will drive a winch, and the crane may be used with a chain sling or a clam shell bucket.

All of the work with the crane is done

by power, which in itself lessens labor, but the time of the truck is greatly economized, which is another important factor. The crane has capacity of three tons at an eight-foot radius, two tons at 11 feet and 1½ tons at 14 feet. The maximum weight that can be lifted with the magnet is 1500 pounds.

Quick loading and unloading were the first requirements, but with the crane metal can be transferred from cars to the truck for handling scrap iron in the yard or elsewhere, for loading other trucks or drays, and, in fact, for any work where the weights are heavy. The chassis is equipped with quick-acting, out-riggers, which can be located wherever necessary to insure truck stability when heavy weight is to be handled, and these can be utilized as desired.

The first crane has been found so economical and satisfactory because of its mobility that the Union Motor Truck Co. is planning to build them in numbers, believing that they will have ready sale.



First Magnet Crane Truck, Magnet Capacity 1500 Pounds, Built by Union Motor Truck Co., Bay City, Mich., for Detroit Scrap Metal Dealer.

NEW YORK CITY TO PUT MORE THAN \$1,000,000 IN TRUCKS.

New York city is to buy 212 five-ton motor trucks to be used by the Street Cleaning Department in snow removal. Four bids for the trucks and portable flushing machines of both the auxiliary and independent type have been received.

The bids for the motor dump trucks are: The White Co., \$1,215,790; International Motor Co., \$1,330,895; Pierce-Arrow Motor Car Co., \$1,354,465, and the Packard Motor Car Co., \$1,452,242. For the flushing machines the White company's bid is the lowest, \$206,400 for flushers to be operated by the engine of the truck, and \$221,943 for flushers to be operated by an independent engine.

TRANSFER STOCK FROM WAREHOUSE TO 78 GROCERIES WITH NINE TRUCKS

NINE trucks, the largest a one-ton Commerce, distributes all stock to 78 grocery stores conducted by the Nicholson-Thackray Co., within a radius of 10 miles of the office and warehouse at Newell avenue, Pawtucket, and do this work so efficiently that the Nicholson-Thackray system of distribution ranks with any in effect anywhere.

When the forces by which this company was enabled to expand to its present proportions from a small beginning are lined up the truck must be put right at the head of the line. The concern got its first truck four years ago when the company had stores only in Pawtucket and Lonsdale. It began to grow overnight with the acquisition of motor haulage equipment. In the past three years alone the number of stores has more than doubled and new ones are being constantly added.

Today a machine starting out from the company's headquarters to visit each of the 78 stores would travel at least 60 miles before reaching the last of them. At the same time the company has naturally concentrated as much as possible, stores nearer home being much easier to serve and, consequently, more economical to operate. As a result the store furthest from headquarters is at Riverside, but 10 miles away. Many stores are in Providence and Pawtucket and others are usually within a half dozen miles of the latter city.

The trucks in service are one-ton Commerce, four Reo speedwagons and four Ford delivery vehicles of $\frac{1}{2}$ ton capacity. The Commerce and the speedwagons average 3000 pounds to a load and make five trips a day. Their average daily run is 40 miles. The trucks work 55 hours a week, 10 every week day but Saturday. One driver is on each truck, there being plenty of assistance in loading and unloading at each end. Only weekly totals of gasoline and oil costs are kept, the nominal outlay shown by these figures being entirely satisfactory to the management.

Every one of the 78 stores gets a load of goods once a week. There may be instances when this schedule is changed. A remarkable run of business might cause an unusual demand at one place. On the other hand, when business is not up to standard two stores have been

supplied by one load. Every attempt is made to have the trucks productive at all times and after emptying its stock at a store the truck usually makes a call at either the Providence or Pawtucket steamboat pier and gets a return load from a current shipment. The trucks run on schedule, taking in a certain number of stores every Monday, another group every Tuesday, etc.

When a store manager runs out of an article for which there is a good demand, or when delayed goods arrive at the warehouse of which the stores are in need, the little Fords gets in their stroke. These vehicles are used by four company inspectors, who make daily visits to the stores, each having about 20 to call on during the day. These light delivery trucks can carry 1000 pounds and usually do so. They have had their work cut out for them in recent months when sugar was being secured in small quantities and doled out in miniature portions to each store as fast as it came. These Fords fill many wants.

While the nine small trucks serve every demand and have been a powerful factor in furthering the company's activities, they could not handle the large tonnage of stock disposed of in the chain of stores were it not for the fact that a spur track of the New York, New Haven & Hartford railroad extends from the Horton's Grove freight yard to the company's warehouse. This reduces stock haulage to distribution to the stores from the warehouse and from the piers to the warehouse and minimizes vehicle transportation cost.

No Lost Time or Motion.

In a general way there is nothing strikingly new about the method of operating the Nicholson-Thackray trucks, but every detail has been coordinated so effectively that each minute of working time dovetails into the next and neither lost time

nor motion ever enters into its truck delivery system.

This policy is climaxed by a shipping and receiving layout in its warehouse which is the last word in scientific distribution. The company remodeled a part of this building a few years ago. The officials knew just what was wrong with the original lay out. Its inconvenience and handicaps to time and labor economies had been steadily cropping up and when the place was reconstructed changes were made to improve its facilities to expedite handling and shipping. Then the last wrinkles in the equipment field were added.

Plenty of doors are a feature of this department. They supply the elbow room which makes for speed in getting the stock into and out of the warehouse. There are three big doors from which goods are shipped, giving the motor haulers plenty of leeway. There are three more doors through which to receive loads from the steamboat piers, or other sources brought by truck. Then there are four doors facing the railroad siding.

From Railroad Car to Truck.

From the nearest track goods are rolled into the warehouse in a jiffy. Quite often the accessibility of these doors is passed up in favor of delivering the goods direct from railroad car to truck. This is a simple operation, as the trucks can be backed to the doors of the cars and there are no outside influences, no crowding or other disturbing conditions to interfere with the transfer of materials from car to truck. This is done frequently to rush the delivery of some much needed commodity. Most of the sugar arriving the past winter and this spring went from railroad cars to trucks and direct to the stores.

The arrangement inside the warehouse is entirely to facilitate handling the stock. Every commodity is kept where it may be reached quickest. Those articles

most in demand are handiest. Full cases are in one department and in another are found opened cases containing goods of which less than a case will fill the order.

Three Cowan transveyors, made by the Cowan Transveyor Co., Hoyoake, Mass., and more than 100 platforms for these are the chief accessories in the plan for



Warehouse and Loading Facilities of the Nicholson-Thackray Co.: Above, Loading Potatoes from Car on Spur Track; at Left, the Trucks at the Shipping Room Doors; at Right, Side of Warehouse, the Shipping Room in Foreground and the Receiving Room Doors Beyond.

speeding distribution. The many convenient doors, a corps of skilled, willing workers and the fleet of trucks do the rest.

The platforms are crude but practical and productive. They are attached and removed from the transveyors by a jack arrangement, which is included in these units. The three transveyors and the hundreds of simple, board platforms do the work faster and more efficiently than could 100 or more industrial trucks.

The transveyor is slid under the platform and the attachment is made automatically. The platform is released by pushing a lever. The transveyor is on wheels and can be handily moved from point to point. When fully loaded it is brought to the door nearest the truck. The loading process is thus greatly simplified.

The platforms are brought to the door for the unloading operation. At that time the goods are not carried to where they will finally be stored. The loaded platforms are simply moved one side out of the way. Later when no unloading is going on the transveyors are used to take the platforms and their loads to the regular departments at the convenience of the workers.

These transveyors have a capacity of 5000 pounds. They never get a load approaching that weight in the grocery trade, most articles coming in bulk. As a matter of fact pigiron or some solid metal could alone give them a capacity load. It is pleasant to know, however, that they will take any load placed on them and have something in reserve.

In filling a small order for one of the stores a transveyor is run under a platform and then makes a round of the department where less-than-case goods are stored. Two workers go with the transveyor and pile on the articles required. When the trip is ended the order has been filled and is ready to be aboard a truck and rushed to its destination.

TRUCKS AID RECORD SHIPMENT.

Through the wholesale use of motor trucks one of the large independent steel companies in the Pittsburgh district shipped out a greater tonnage in July than in any month of its history.

TELEPHONE COMPANY HOUSES CONSTRUCTION GANGS IN TRAILER TRAINS

The Pacific Telephone & Telegraph Co. has put a trailer train to work on a big construction job in California, being the first to use these vehicles in this way on such an extensive scale. The company bought 17 trailers to be hauled in trains of four or five by a powerful road tractor and to be used by workmen when erecting a telephone or telegraph line remote from cities. The trailers are fitted with regular car bodies, eight feet wide and from 12 to 24 feet long. Some are used for sleeping quarters, others as dining cars, and still others as offices, while some are work cars for hauling poles, wires and other material.

The sleeping cars have full size single berths, wash room, shower bath, etc. The dining cars have a horse show counter at one end with seats for 14 men, and at the other end is a complete kitchen, including range, ice chest, dish closet, sink with hot and cold water, etc.

Each train is composed of a diner, two sleeping cars, a combination office and sleeping car and a water tank and tool trailer. The train will accommodate 35 to 40 men, and the telephone company believes this method of housing and feeding its men while on outside construction work is going to solve one of its most difficult problems. The trailers were furnished by a California trailer company which has supplied from 40 to 50 trailers to the telephone company.

24,356 TRUCKS EXPORTED.

Records of the Department of Commerce show that 24,356 trucks, valued at \$41,577,684, were exported during the year ending June 30, as compared with 12,921, valued at \$33,233,485 in the previous year. Of these 4593 went to the United Kingdom. Canada took 2443 trucks, Cuba 1526 and France 1392, while the latter country imported only 839 passenger cars from the United States. Japan bought 1096 American trucks and Mexico 1017.

AVAILABLE TRUCKS EQUIPPED FOR TRAILER CONNECTIONS.

The Available Truck Co., Chicago, Ill., was quick to realize the productiveness of the trailer in the oil fields and is now equipping every Available truck with a tow hook on each front side rail and a pintle hook fastened to the rear cross member for the express purpose of convenient handling of trailers. The pintle hook is the invention of Sales Manager Nolan of the Available Co.

This makes it possible for an Available truck, moderately loaded and used with judgment, to haul from two to several average truck loads when the weight is distributed on one or more trailers at each trip. Distribution of the load makes it possible to haul surprising weights of oil field materials.

MAMMOTH OIL TANK FOR SINCLAIR RACING TEAM.

The Sinclair Oil Co. has recently placed in its service what is probably one of the largest portable oil tanks in general use, this being an addition to what is known as the Sinclair "racing team." The tank is steel and has capacity of 2400 gallons of oil. It is mounted on a Mack 7½-ton truck chassis, which is equipped with Sewell cushion wheels and Kelly-Springfield caterpillar tires. The accompanying illustration shows the proportions of the tank.

SOME ELDERLY MACKS.

Data on the age of a few of the old-time Mack trucks in service give the lie to the old theory that the life of a truck is five years. Higgin's Tours in Chicago and New Orleans have Mack trucks running that are from 14 to 19 years old. Kirkman & Son, Brooklyn, has a fleet of Macks, several being from eight to 13 years of age. The American Sugar Refining Co., New York, has 15 old type Macks, all over eight years of age.

DUPLEX TRUCKS IN MEXICO.

E. L. Howard Y Cia, Av. Juarez 95, Mexico, D. F., reports a rising demand for the four-wheel drive trucks manufactured by the Duplex Truck Co., Lansing, Mich., following a successful demonstration of what these trucks can do. The Mexican distributors say that the call comes from farmers, mining companies and other industrial enterprises.

TRUCK HAULS COAL FOR CITY.

The city of Decatur, Ill., has purchased a four-ton Indiana truck to haul coal from the local mines to the city pumping station. It is estimated that from 25 to 40 cents will be saved on each ton hauled and that the truck will pay for itself in 18 months.

The Motor Sales Co., has been formed at Hereford, Tex., with L. W. Hough in charge, and will handle automobiles, trucks, tractors and farm machinery.



Sinclair Oil Co.'s "Racing Team" Oil Tank. Capacity 2400 Gallons, on Mack 7½-Ton Chassis Equipped with Sewell Cushion Wheels.

HOW DEALER MADE GOOD IN NEW CITY

BREAKING into a new city always forms a hazard for the truck dealer. It is done in many ways, some good, others not so good. The fellow who breaks in wrong finds the going hard. The dealer's entire future is builded in the first few months. He only can go the route once. On this trip he should follow the signs and drive straight ahead when the board so directs. There are detours to be taken in order to avoid rough traveling and these should always be followed.

A truck dealer we know recently pursued three paths and all of them led to the port of success. First he advertised in the home newspaper, not haphazardly, but along carefully chosen lines. Second, he joined the Chamber of Commerce and spent most of his spare time in the chamber's social atmosphere. Third, he allied himself with the city editor of the local paper, paying the newspaperman for the time and energy expended in his behalf.

His advertising featured two things. His truck and himself. The truck always played the leading role, however. There was a personal note to every "ad." He told in his advertising just what he would want to know himself if he were buying a truck. He avoided technical talk. He promised honest and faithful service. Later he made good on this promise.

His "ads" were not very large. They were simply reminders that he was on the job, that his truck was ready to go on the job and was capable of doing all

that a truck could reasonably be asked to do. He even talked price, demonstrating that his truck had the elements to stand up alongside of other power vehicles that cost more, and had so proven.

Regarding himself he inserted just enough of the human element to interest the reader in the man behind the truck. He made plain his readiness to solve the transportation problems of any person, whether truck prospects or no. He held himself up as one willing to serve at all hours of the day or night.

Through the secretary and traffic manager of the Chamber of Commerce he got in touch with the local transportation situation. He secured a list of men engaged in the business of truck hauling. He found out how many trucks they had and of what type, how much business they were doing and their rates. He came into contact with mill men and merchants of all kinds who owned trucks and who might be expected to own more.

The Real Success Builder.

He charges much of his success up to judicious advertising and much to the Chamber of Commerce, but when he is questioned as to the greatest agency in his success he unhesitatingly puts the asterisks after the name of the city editor.

The latter found out how many trucks the haulers, the manufacturers and the merchants had and of what make. He learned what manufacturers were calling on the general truckmen for extra haulage. He also gave him several direct tips as to people who were in the field

for their first truck or for an addition to their fleet.

The city editor knew the city and everybody in it. He actually put the dealer on his feet. He brought in greater results than would have several salesmen and his commission was but a part of what one salesman would have received.

Another point at which the newspaper worker was a valuable asset was in the matter of advertising. He pointed out the best kind of advertising and often wrote the "ads." In addition to taking the usual space the dealer found good returns from so-called classified advertising, which is cheap and which is probably read by more people than is a larger announcement.

Also when the dealer sold a truck to the city highway department—which deal was groomed by the city editor—the newspaper ally got a few lines about the sale into the news columns. Several other instances cropped up where the truck was mentioned in reading matter, which is the best kind of advertising.

The dealer's activities in the Chamber of Commerce soon won him recognition. He was appointed on the transportation committee. He met many leading residents. Meanwhile the city editor had been introducing him to friends. The advertising had made him well known. In less than a year he was boosting the city as his own and the city was coming right back, boosting his business and shouting its pride in its new and solid citizen.

NAPOLEON SALES MANAGER TOURS IN OFFICE TRUCK.

Extremely satisfactory results are attending the sales organization development plan of the Napoleon Motors Co., Traverse City, Mich., which mounted specially designed body on a 1½-ton Napoleon chassis which serves as an office for its representative by day and comfortable sleeping quarters at night, so that he is entirely independent of the usual means of travel and of hotels.

The truck was used by General Manager Edward Edenburn during the international tour of the Michigan Pikes Association, and then was turned over to C. W. Waughop, sales manager for the Mohican Motors Corporation, New York city, eastern distributor of Napoleon trucks. Mr. Waughop is making a tour of the eastern states, visiting the commercial centers to establish agencies and appoint distributors, being accompanied by J. O. Peet as driver. The truck is well furnished and conversion of the office for sleeping can be quickly done.

DRIVE TO FURTHER POPULARIZE PERFECTION HEATERS.

Perfection heaters, with which many leading cars and trucks are equipped, are to be further popularized through an extensive national advertising campaign

to be conducted in behalf of the manufacturer, the Perfection Heater & Manufacturing Co., 6545 Carnegie avenue, Cleveland, O., by the Akron Advertising Agency Co., Akron, O.

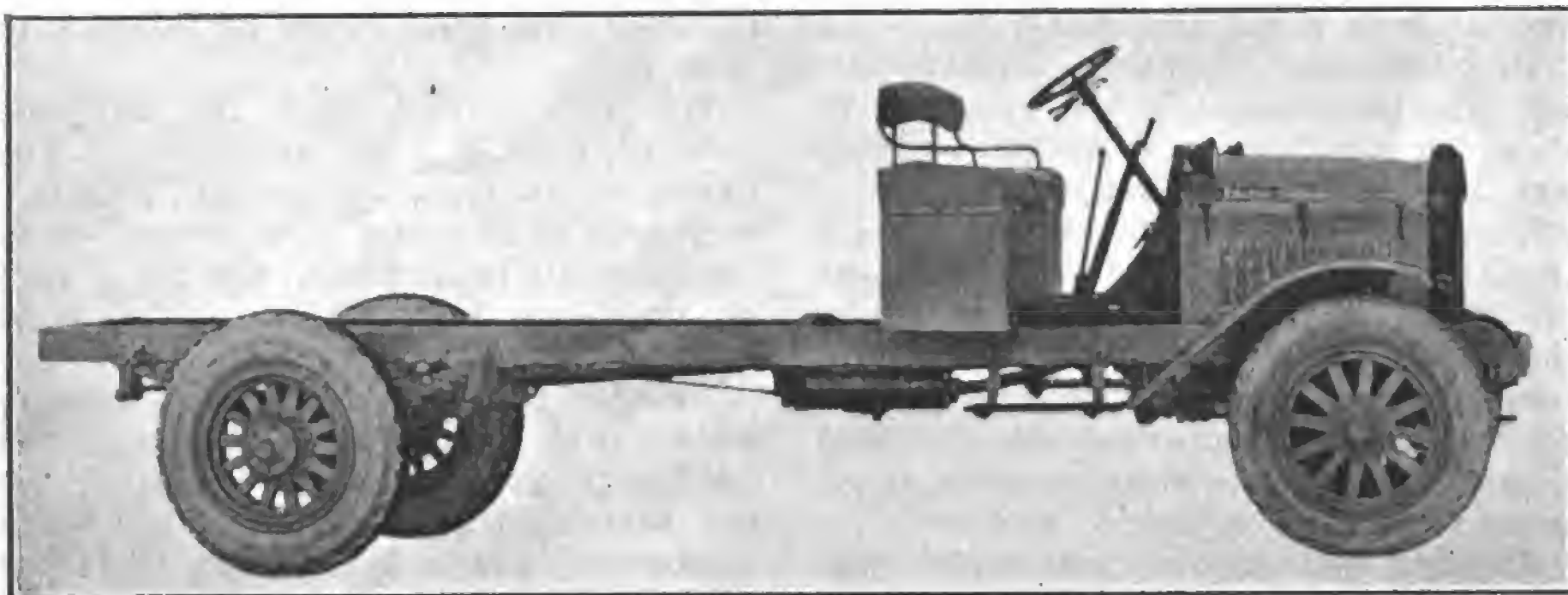
MOTOR TRUCK is one of the 15 leading national publications in which to

herald broadcast the qualities which have caused the Perfection heater to be recognized as standard vehicle equipment. The drive is counted on to multiply dealers' sales and make Perfection heaters known to all power vehicle users.



Napoleon 1½-Ton Truck Chassis, Equipped with Special Body, the Office of the Sales Manager of Mohican Motor Corporation, Eastern Distributor, While on the Road.

FOUR SIZES OF TRAYLOR TRUCKS



Side View of the Complete 2½-Ton Traylor Truck Chassis, One of the Four Sizes Built to a Standard Design.

FOUR chassis sizes, rated at load capacities of 2000, 3000, 5000 and 7000 pounds are built by the Traylor Manfg. & Engineering Co., which has its truck and farm tractor plant at Cornwells, Pa., which, following extensive production of government contracts during the world war, was converted to industrial uses. The company has a large plant at Allentown, Pa., which is devoted to manufacture of varying types of machinery, much of which is for stone crushing, mining, milling and cement working.

The company operates on a large scale and it is now developing its sales organization to distribute both trucks and tractors and the intention is to produce the series in whatever volume may be necessary to meet the demand.

In designing the trucks decision was reached to use standard construction units, which are recognized as having known quality, and to build what measured to the requirements of those who require high grade dependable vehicles. Long service life and economy of operating and maintenance expense were sought in the experimental work and the machines have been sold with assurance of complete development.

High Grade Construction Units.

In general the chassis are constructed to a standard design, differing only in dimension of parts, and the construction units include Buda engines, Pierce governors, Zenith carburetors and Splittorf Dixie magnetoes, G & O radiators, Covert multiple disc clutches, Covert selective sliding gear transmission gearsets, Sheldon semi-floating worm rear axles, Savage frames, Ross steering gears and Schwarz wood wheels.

Much care has been directed toward development of the assembly details and the claim is made that the chassis are extremely well balanced and have unusual endurance, and this with comparatively light weight because of the quality of materials. The units are very accessible for maintenance or restoration work and the chassis lubrication has been worked out with much care.

Wheelbase and Tread Dimensions.

The description of the largest chassis will serve for all with such dimensions as are essential for two of the smaller sizes. The wheelbase is 150 inches standard, with 170 inches optional these

affording respectively 142 and 164 inches space back of the drivers' seats. The tread is 56 inches forward and 58 inches rear. The wheelbase of the 5000 pound chassis is 138 inches with 120 inches space back of the seat, and the 3000 pound chassis has wheelbase of 132 inches with 117 inches space on the frame for the body.

The engine for the largest chassis is a model HTU, having cylinder bore of 4½ inches and stroke of 5½, which is rated at 28.90 horsepower by the S. A. E. formula. The engine for the 5000 pound chassis is a model ITU with cylinder bore of four inches and stroke of 5½, rated at 25.60 horsepower, and the engine for the 3000 pound chassis is a model WU, with cylinder bore of 3¾ inches and stroke of 5½ inches, rated at 22.50 horsepower. The smallest engine is cooled by a thermo-syphon circulation of water. Aside from dimensions the principal difference between the large and the two smaller chassis is that the first has a four forward speed ratio transmission gearset, and the others three forward speed ratio gearsets.

Heavy Duty Truck Type Engines.

The engine is a four-cylinder four-cycle water-cooled L-head type with the cylinders cast en bloc, with the water jacket integral, and with the head separable. The water chambers are large and formed to insure free circulation of the water in them. The pistons are each fitted with three rings. The crankcases are two-section, the upper halves carrying the main bearings and having forward and rear extensions that house the timing gearsets and the flywheels. The lower sections are divided by horizontal plates that form the bases of the crank chambers and the tops of the oil reservoirs. They are fitted with plates on which the oil pumps are mount-

ed so that the pumps may be removed for cleaning and with drainage plugs.

The crankshafts are three-journal types, the journals and crankpins being of generous length, drop forged from special alloy steel, heat treated and ground. The camshafts are drop forged with the cams integral, and these are three-journal construction. The connecting rods are heat treated steel drop forgings. The timing gears and shafts are large and the gears are wide faced. The main and crankpin bearings are babbit metal in bronze shells and the camshaft bearings are bronze. The valve tappets are a mushroom type. The valves are fully enclosed.

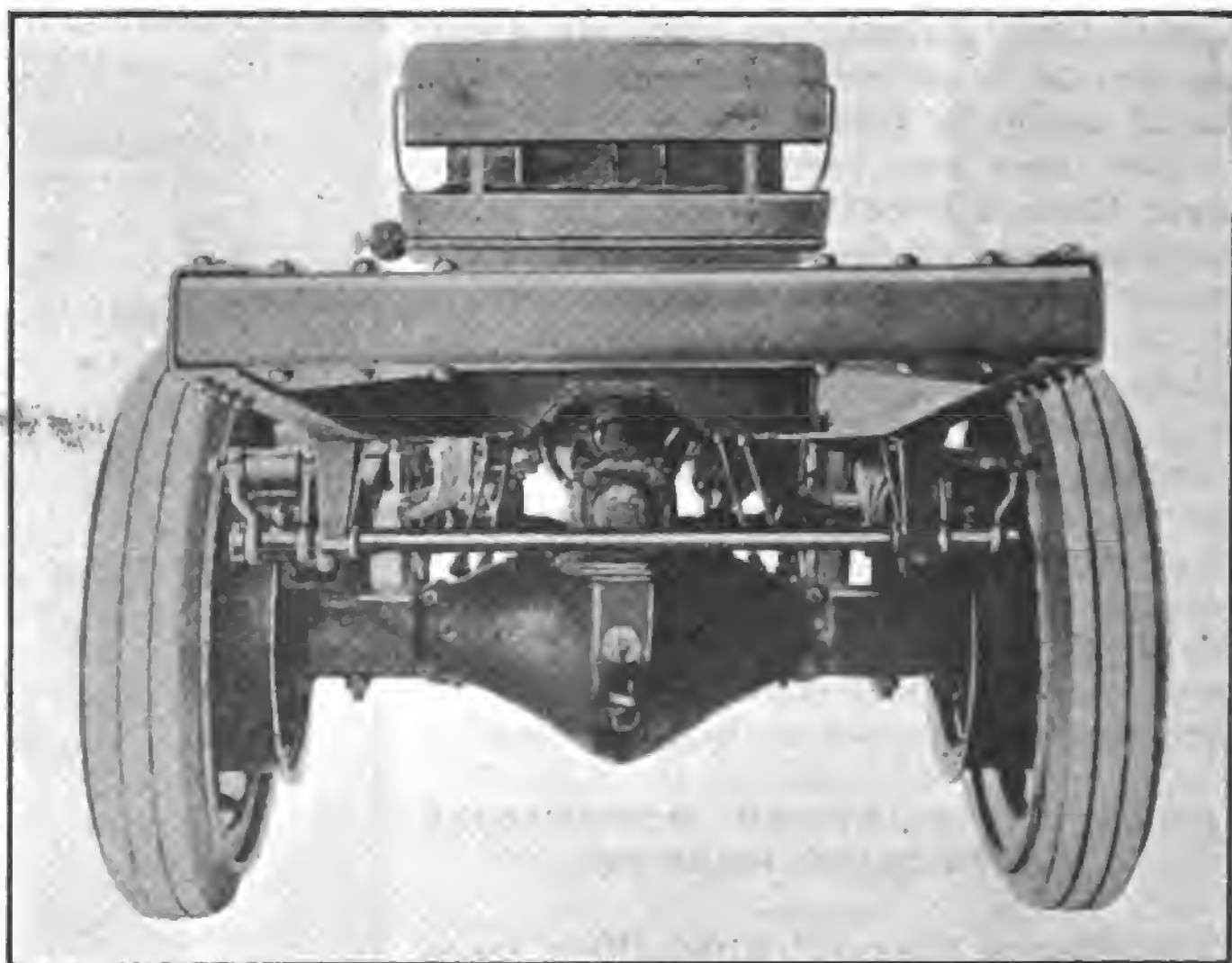
Engine Cooling and Lubrication.

The engines are lubricated by a full pressure system, the oil being drawn through filtering screens from intakes in the wells in the reservoirs, and forced by gear-driven pumps through manifolds to the main and camshaft bearings and the timing gearsets, and from the main bearings through drilled ducts in the crankshafts to the crankpins, and thence through tubes to the wristpins. The oil thrown off by the centrifugal movement of the crankshafts is distributed to the cylinder and piston walls, the cams and valve tappets.

The engines of the two larger chassis are cooled by circulations of water forced through the cylinder jackets by centrifugal pumps and through radiators with finned square tube cooling sections and cast top and bottom tanks, the cooling sections being removable for cleaning or repair. The engines of the smaller chassis are cooled by thermo-syphon circulation of water through radiators of the same type. The air drafts are created by large fans driven by flat belts from pulleys on the extensions of the water pump and magneto shafts. The fan belts are adjustable.

Power Transmission Systems.

The engines are equipped with Pierce governors and Zenith carburetors, and



Rear View of the 2½-Ton Traylor Truck Chassis, Showing the Sheldon Worm Driven Axle, the Spring Suspension and the Frame Construction.

the sources of ignition current are Dixie magnetos fitted with impulse starters. The engines are combined with Covert multiple dry disc clutches and Covert selective type sliding gear transmission gearsets, that of the larger chassis having four forward speed ratios and those of the two smaller chassis having three forward speed ratios, as unit power plants, and these are suspended in the chassis at three points.

The main shafts are two-section, of large tube, with three universal joints, and the rear ends of the forward sections are mounted in self-aligning ball bearings on frame cross members, and coupled to the worm shafts of the Sheldon axles. These axles are semi-floating types, fitted with annular ball bearings throughout and having reductions of 7.75 to 1, 7.70 to 1 and 7.80 to 1 respectively in the order of chassis sizes. The axles are constructed with the worm shafts and worm wheels assembled with the differential gearsets on the cover plates of the bowls, and these assemblies

are removable as units when this is necessary for inspection or repair. Claim is made that no adjustment of the bearings of these axles is necessary.

Other Constructional Detail.

The front axles are drop forged heat treated steel with heavy steering knuckles. The frames are pressed steel channel section, of unusual depth and with wide webs with heavy cross members strongly reinforced with gusset plates. These are suspended on semi-elliptic springs with bronze bushed eyes, fitted with hardened and ground bolts. The forward springs are 40, 38 and 36 inches length and $2\frac{1}{2}$, $2\frac{1}{2}$ and $2\frac{1}{4}$ inches width in the order of chassis size, and the rear springs are 52, 50 and 48 inches length and three, $2\frac{1}{2}$ and $2\frac{1}{2}$ inches width in the same order.

The wheels are wood, artillery type, and these are shod with solid tires, the sizes in the order of chassis previously stated being 36 by four inches forward and 36 by seven single or 36 by four inches dual rear; 36 by four inches for-

ward and 36 by six inches rear, and 34 by $3\frac{1}{2}$ inches forward and 34 by five inches rear.

The steering gears are a screw and nut construction with heavy linkage and with adequate provision for adjustment and lubrication. The control is conventional and the steering column is at the left side with the spark and throttle levers on the dash. The brakes are both internal expanding within drums on the rear wheels, and are fully enclosed.

The standard equipment includes drivers' seats, front fenders, running boards, heavy steel bumpers, tool boxes, kits of tools, jacks, oil dash and tail lamps.

At Cornwells the company has a tract of 114 acres and an admirably equipped manufacturing plant which can be expanded to meet any production demand. The company has an export department established at 25 Beaver street, New York city, and shipping can be made from the plant by railroad, or by water line, for the factory site has a frontage of 1450 feet on the Delaware river.

TRAILER MAKERS FIND BIG DEMAND AFTER TEMPORARY LULL

That business is beginning to pile up after a temporary lull and that foreign orders are coming along at a rapid rate was reported at a meeting of the Trailer Manufacturers' Association of America, held in Cleveland, O., early this month. Unfilled orders will keep all the factories busy for a month or two while fresh demand is being made manifest.

A committee on standardization was appointed to investigate the feasibility of having uniform axle dimensions and a standard pintle hook for coupling trailers to motor trucks. A reduction in the number of trailer models was advocated and one maker announced that he had already cut the number of his models from 48 to 12. The patents committee was instructed to bring in recommendations regarding the patent situation at the annual meeting to be held in New York in January.

A design for the slogan, "Truck by Trailer," adopted for the industry at the May meeting, was accepted. Application for membership by Wentworth & Irwin, trailer manufacturers at Portland, Ore., was unanimously approved, increasing the membership to 23. It was also unanimously voted to double the initiation fee and annual dues in the association beginning the first of the new year. A number of interesting addresses were made.

Among those in attendance were:

J. H. Fertig, Arcadia Trailer Corporation, Newark, N. Y.

H. C. Fruehauf, Fruehauf Trailer Co., Detroit, Mich.

C. H. Martin, Martin Rocking Fifth Wheel Co., Springfield, Mass.

J. C. Endebrock, Trailmobile Co., Cincinnati, O.

W. E. Ferris, Ohio Motor Vehicle Co., Cleveland, O.

I. S. Byrum, Troy Wagon Works Co., Troy, O.

S. A. Griggs, Detroit Trailer Co., Detroit, Mich.

Max Herrmann, Warner Manufacturing Co., Beloit, Wis.

J. W. Menhall, Highway Trailer Co., Edgerton, Wis.

A. G. Vayo, Northway Trailercar Co., Rochester, N. Y.

F. H. Hoeck, E & W Manufacturing Co., Milwaukee, Wis.

O. E. Byron, Byron Engineering Works, Louisville, Ky.

H. W. Perry, Trailer Manufacturers' Association, New York, N. Y.

GUATEMALA IS IN MARKET FOR TRUCKS AND TRACTORS.

E. M. Lawton, former consul general at Guatemala City, who is in the United States previous to filling a new post in Brazil, reports that the Guatemala government is in the market for trucks and tractors, the latter equipped for work in sugar, rice, coffee and lumber.

Mr. Lawton says: "The only thing needed to sell American trucks and tractors in Guatemala is the sending of demonstrators, equipped with suitable trucks and tractors by American manufacturers and exporters to that country. These automotive vehicles can be sold best by first dealing with the agricultural department of the government, which is establishing an agricultural college."

VENEZUELA GOVERNMENT SEEKS TRUCKS AND TRACTORS.

Eduardo G. Mancera, a member of the Venezuela Senate, and a leading farmer, is in this country to confer with Department of Agriculture officials in relation to the use of auto farm power equipment. He will buy 20 motor trucks and 10 tractors for use in Venezuela.

Senator Mancera says that all Central America needs improved methods of agriculture.

TRUCK DELIVERY SAVES ICE CREAM MANUFACTURERS \$20,000 YEARLY

The Hydrox Co., the largest manufacturers of ice cream in Chicago, began to use trucks only two years ago and is now sorry that it has not done so for years. This is a hustling, progressive concern, but it had gone along in the belief that trucks would not be economical because of the short hauls and frequent stops necessary in its operations.

Today the company has 24 trucks, of which 12 are Service trucks of 2, $3\frac{1}{2}$ and five-ton capacities. Electric trucks are used for the very short hauls.

The company keeps cost records which show that it has reduced its annual haulage costs \$20,000. It has brought down the cost of delivering a gallon of ice cream from \$.0506 to \$.0322. It is now serving suburban towns it never reached before, thus enlarging its business and augmenting its profit. Its Service trucks average 300 working days a year and cover between 10,000 and 14,000 miles. One truck frequently delivers 500 gallons a day.

MARKETS CROP IN A DAY.

The utility of the motor truck has seldom been better exemplified than in the case of a farmer near Colorado Springs, Col. He raised 25,000 pounds of beans. Four trucks took them 40 miles to market in one day. He received his money for his product the same day. That is speeding up farm operation.

BUSES IN BROOKLYN STRIKE.

Motor buses by the hundreds were used to transport the thousands affected by the Brooklyn Rapid Transit strike. Nearly a million people were carried by these vehicles daily.

FAGEOL TRUCK PLANT AT CLEVELAND



F. R. Fageol, President of the Fageol Motors Co. of Ohio, at Cleveland, O.

WITH the object of securing a location for a manufacturing plant that is central with reference to sources of materials, supplies and for distributing its products without the burden of freight charges from the Pacific coast, the Fageol Motors Co. (of Ohio) has been organized and is now established at Cleveland, O., to produce trucks from practically the same designs used by the Fageol Motors Co., which begun business at Oakland, Cal., three years ago.

The company originally built passenger cars and in turn developed and constructed trucks and tractors. Claim was made that these machines had qualities peculiar to themselves and they were high grade from every point of view and especially desirable. The growth of the company's business was very satisfactory, but it was in a sense limited to the country west of Denver, Col., by the cost of freight on materials and on vehicles shipped to distributors.

WIN Produce Largely at Cleveland.

The demand for machines was so large that to meet it the company decided to establish a factory at Cleveland and to do this organized another company that is separate, but is controlled by practically the same interests as the original.

Fageol trucks are constructed to conventional practise so far as appearance goes but they have two qualities that are exclusive and which are claimed to be distinct engineering practises. The one of these is the use of a compound transmission gearset which affords five forward speed ratios, and the other is a system of spring lubrication designed by Cornelius T. Myers, with which the eyes, bolts and shackles are constantly supplied from magazines, so there is little probability of wear from lack of lubricant.

Fageol Seven-Speed Gearset.

The compound gearset is the development of F. R. Fageol and was perfected

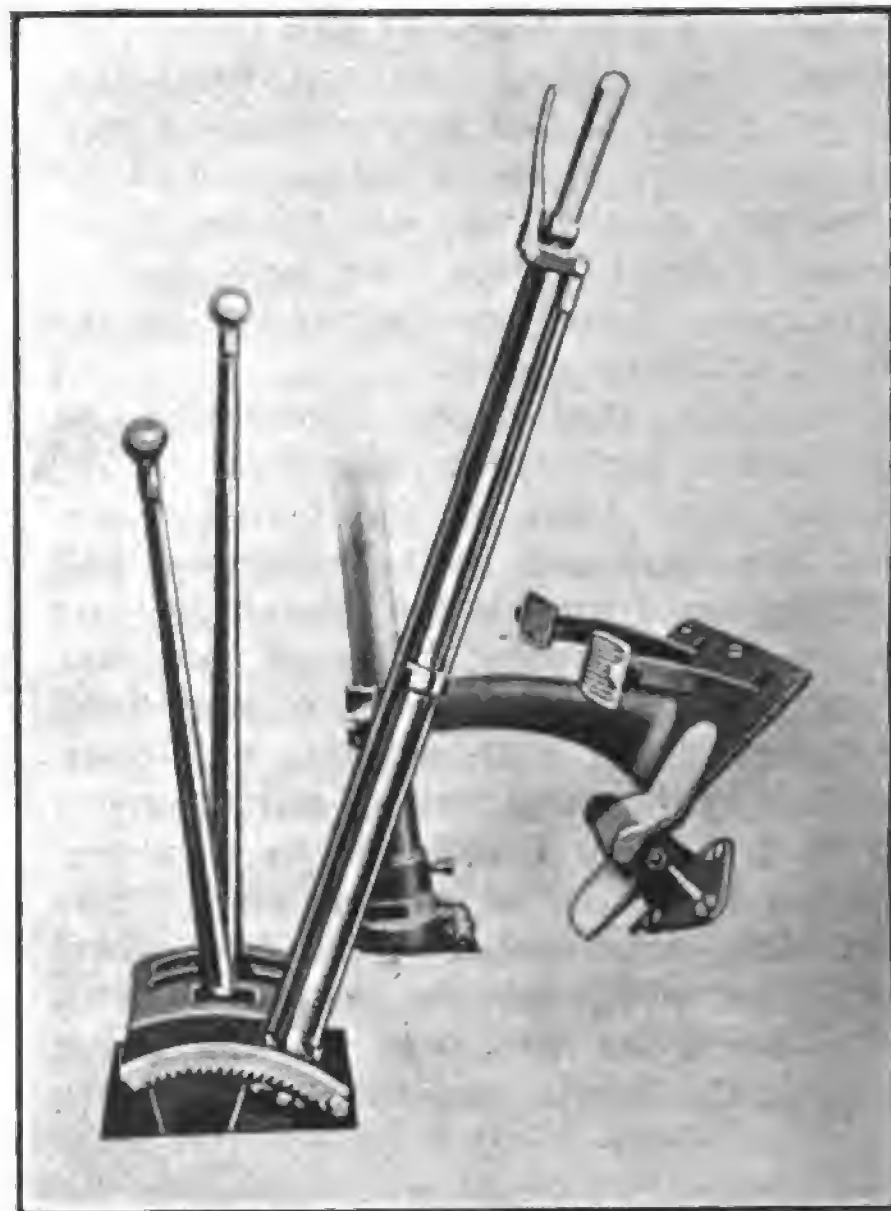
by the engineering staff of the company, and patents have been applied for that cover it. This differs with all other gearsets in that the countershaft is driven at either of two speeds and the fifth ratio forward or high is an "over-gear" which does not increase the number of revolutions of the engine but is claimed to afford 36 per cent. greater road speed than is possible with a transmission gearset of standard type, and also reduces the fuel consumption a mile. The first forward ratio is extremely low and statement is that this affords 91 per cent. greater pulling power than can be obtained from a conventional gearset.

In this gearset the countershaft parallels the main shaft at the side and both shafts are splined. There is a clutch sliding on the countershaft between the high and low gears, at the forward end, which is controlled by a lever that moves in a straight slot independent of the regular gear shifting lever. At the rear end of the main shaft is a second clutch that is controlled by the main or gear shift lever, with which the intermediate, low or reverse gears are engaged as with the conventional gearset, or the two sections of the main shaft are coupled for direct drive. A lock prevents two gears being simultaneously engaged.

Changes Through the Countershaft.

The countershaft lever affords either high or low, and there are four positions for the gear shifting lever in the H plate, these being the usual first or high, intermediate, low and reverse. With the countershaft lever in "high" the changes of the gear shifting lever give the following ratios: First (low), 3.13 to 1; intermediate (direct), 1 to 1; high (over-gear), .722 to 1; reverse, 3.91 to 1. The high and low ratio positions are at one end of the H and the intermediate and reverse positions at the other. With the countershaft lever in "low" the changes of the gear shifting lever give the following ratios: First (low), 7.65 to 1; intermediate, 1.76 to 1; high (direct), 1 to 1; reverse, 9.58 to 1.

One will note from the above statement that the countershaft lever has



Fageol Compound Transmission Gearset Control Levers, the Countershaft Lever in Extreme Rear or Low Position.

two positions—high and low. The gear ratios obtained by movement of the gear shifting lever is the same, with reference to lever position, for the first and reverse, but while the direct drive is the third ratio with the countershaft lever at low, the direct drive is the second ratio with the countershaft lever at high. In other words the movement of the countershaft lever varies the position at which direct drive is established by the gear shifting lever.

The gearset is extremely practical and claim is made that the slow application of maximum power to the rear wheels when starting heavy loads insures against shaft breakage and excessive strains upon springs and radius rods. After starting less power is required to keep the vehicle moving, and greater speed is possible with the "over gear" without racing the engine. Because of this a smaller and more economical engine can be used with this unit than with a standard type gearset. The gear-



Fageol 5-6-Ton Truck, Equipped with Compound Transmission Gearset, Affording Five Forward Speed Ratios, Which is Claimed to Have Large Power and Fuel Efficiency.

set has been used for more than three years in upwards of 300 trucks in all kinds of work on the Pacific Coast and has been proven satisfactorily to the company.

Four Sizes of Chassis.

Fageol trucks are built in four sizes, the chassis being rated at $1\frac{1}{2}$, $2\frac{1}{2}$, $3\frac{1}{2}$ -4 and 5-6 tons load capacities. In the order stated these have standard wheelbases of 136, 150 and 172 inches, but other lengths are built to specification. The engines of the chassis are Lycomings for the $1\frac{1}{2}$ -ton unit and Waukeshas for the larger sizes. The Lycoming engines have cylinder bore of $3\frac{1}{4}$ inches and stroke of five inches, and are rated at 19.60 horsepower by the S. A. E. formula. The engine for the $2\frac{1}{2}$ -ton chassis has cylinder bore of $4\frac{3}{8}$ inches and stroke of $5\frac{1}{4}$ inches and is rated at 30.60 horsepower while the engines for the $3\frac{1}{2}$ -4 and 5-6 ton trucks have cylinder bores of $4\frac{1}{2}$ inches and strokes of $6\frac{1}{4}$ inches, and these are rated at 32.40 horsepower.

The Lycoming engine is combined with a dry plate clutch and a compound gear-set in a unit power plant, but the others are equipped with dry plate and dry disc clutches. The Waukesha engines are built with cylinders cast in pairs, with detachable heads, with the transmission gearsets mounted amidships and the valve design being the conventional L-type. The engines are cooled by water circulated by centrifugal pumps, through radiators having cellular cooling sections and cast top and bottom tanks. The ra-

diators are mounted on heavy fabric pads on the frames. Radiation is promoted by belt driven fans. The larger engines are lubricated by the Waukesha system, the oil being fed by geared pumps under pressure to all main and connecting rod bearings and distributed by splash and throw-off to all parts of the engines. The oil pumps and filters are accessible and easily removable.

The sources of ignition current are Splittorf high tension magnetos with impulse starters, and the fuel is supplied from 25-gallon tanks under the drivers' seats by vacuum systems to Zenith carburetors. The power plants and engines are suspended at three points.

General Chassis Construction.

The drive from the transmission gearsets to the rear axles are standard full floating Timken worm shaft and worm wheel construction. The front axles are steel drop forgings with heavy steering knuckles. The wheel spindles are fitted with taper roller bearings. The frames are pressed steel channel section with wide flanges, well reinforced with cross members and gusset plates, hot riveted. On the larger frames bumpers are integral with them.

The frames are suspended on unusually long semi-elliptic springs, the driving and braking stresses being absorbed by the rear set in the two smaller chassis, the drive being the Hotchkiss type, while in the larger chassis the rear springs are unshackled and the drive is through radius rods. The unshackled springs are flattened and are fitted in

guides. All the springs, the hangers and the spring bolts are lubricated by the Myers' patent oiling system, with which the magazines are replenished at long intervals. Claim is made that with this method spring lubrication an exceptional degree of flexibility is realized that minimizes mechanical wear. The wheels are steel and are fitted with solid tires. Pneumatic tires are extras.

The Characteristics of Control.

The steering gears are an irreversible worm and nut type located at the left side of the chassis, and the connections are with hardened and ground steel balls held between springs in hardened sockets. The control units are placed to meet the conventional requirements, the spark and throttle levers being mounted in a unit with the ignition switches on the dashes. The main variance from standard practise is the countershaft lever which is grouped with the gear shifting and emergency brake levers in the center of the footboards.

The brakes are large and are both internal expanding within drums on the rear wheels.

The standard equipment includes drivers' seats, front fenders, running boards, steel dashes, oil dash and tail lamps, mechanical horns, tool boxes, complete tool kits, wheel wrenches, ratchet screw jacks and oil cans. Special equipment includes special wheelbase, cab, windshield, electric lights and engine starter, power tire pump and special tire equipment.

REDESIGNED PARKER TRUCK SERIES

CONCENTRATION on three sizes of truck chassis, conclusion having been reached that these will serve the greater part of the demands for haulage units, has been adopted by the Parker Motor Truck Co., Milwaukee, Wis., and it is now producing machines of two, $3\frac{1}{2}$ and five tons rating. During eight years of activity in the industry and during that time having built trucks of $1\frac{1}{2}$, $2\frac{1}{2}$, three, four and seven tons load capacity, the company has found that the largest market obtains for the sizes that it has now in production.

Statement is made that this concentration has a number of advantages in that the distributor need have but three machines for display in a sales room, and that the stock of parts necessary to afford desirable service for owners is minimized, especially as a considerable number of the parts of each machine is interchangeable.

This lessens the initial and continuous investment of the distributor and correspondingly reduces the stock that must be carried at the factory so far as number is concerned. This is of decided importance with the increase of the volume of business. Another factor having bearing is that the cost of production is minimized and there is not the need of the machine equipment necessary for factory production of components for wider range of chassis sizes.

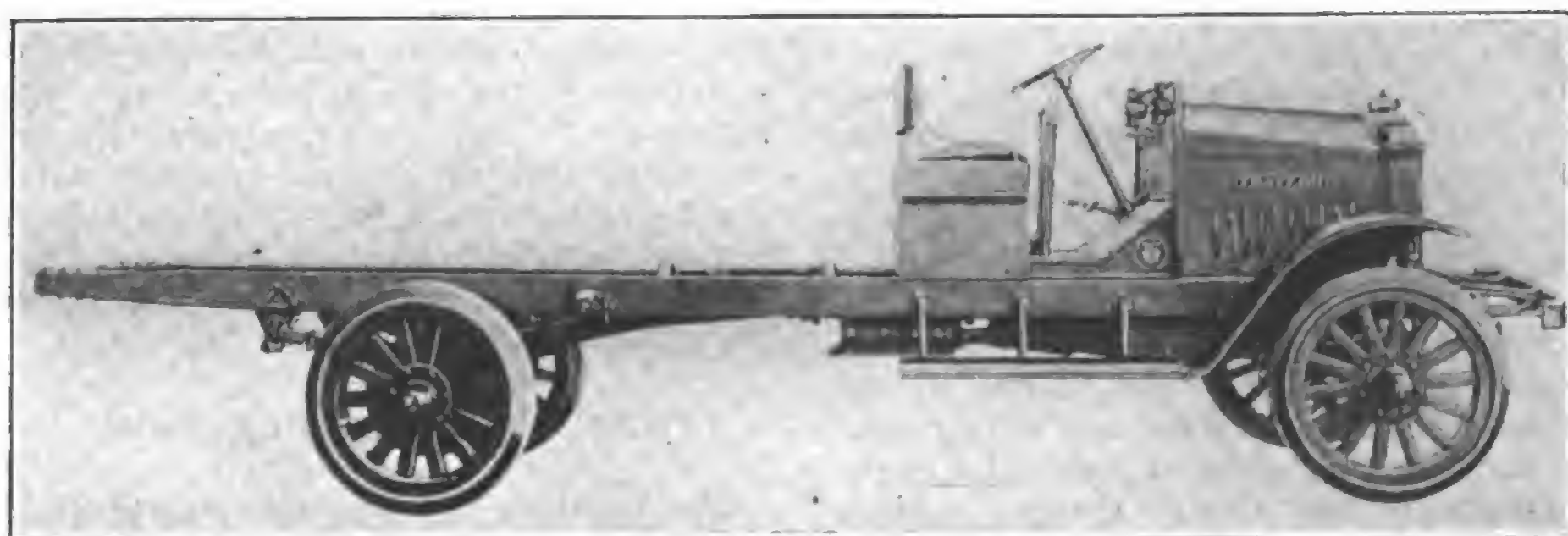
The conclusion has been reached that standardization of vehicle equipment by owners depends largely upon the character of service that is obtainable, and the factory service can be better afforded with a fewer number of sizes, though there might be some demand for other units were a concern to undertake to supply every requirement for vehicular transportation. The company, however, has engaged in greater attention to body equipment, which is expected to considerably influence the market.

Constructed from Standard Units.

The series of Parker trucks now built includes these well known products of specialists, all of which are recognized as having standard quality: Wisconsin

engines, Bosch magnetos, Stromberg carburetors, Westinghouse lighting and starting systems, Monarch governors, Parker radiators, Brown-Lipe multiple dry disc clutches, Warner transmission gearsets (for the $3\frac{1}{2}$ and five-ton chassis), Thermoid flexible joints, Blood Bros. universal joints, Parker rear axles, Tuthill springs, Ross steering gears and Alemite chassis lubricating systems.

A brief summary of the mechanical facts of the $3\frac{1}{2}$ -ton chassis will in a general way present the other two machines, as many of the components, including the service brake, are interchangeable on all three. The engine has a cylinder bore of $4\frac{1}{2}$ inches and stroke of six inches, while that of the five-ton



Side View of the Complete Parker Two-Ton Truck Chassis, Which Is Characteristic of the New Standard Design for Three Machines.

chassis has cylinder bore of $4\frac{3}{4}$ inches and stroke of six inches. The horsepower developed by these, according to the S. A. E. formula, is 32.40 and 36.10 respectively. Claim is made, however, that the smaller engine will develop 43 actual horsepower at its maximum governed speed, which will afford a maximum road speed of the vehicle of 16 miles an hour, and the larger will develop in excess of 50 horsepower.

Characteristics of the Engines.

The engines are a heavy duty type developed especially for truck construction, and the design is standard. The crankshafts are four-journal, having large total bearing length. That of the $3\frac{1}{2}$ -ton chassis, for instance, having front and two center bearings each $2\frac{1}{2}$ inches length and a rear bearing $3\frac{1}{2}$ inches length, a total of 11 inches, and the shaft is two inches diameter.

The engines are L-head types, with separable heads and they are cooled by circulations of water forced through the cylinder jackets by centrifugal pumps driven from the timing gearsets, and through radiators with staggered vertical tube cooling sections with cast top and bottom tanks, built in the Parker factory.

The radiator frames are so constructed that disassembly and assembly in the event of need of repair or cleaning can be done with simple tools. The radiators are mounted on ball and socket supports that insure against damage from vibration and frame distortion. The radiators are cooled by belt driven fans that are carried on adjustable brackets.

The engines are lubricated by the well known Wisconsin force feed system, the oil being drawn from screened intakes in the reservoirs by gear driven pumps and forced under 20 pounds pressure to the main and camshaft bearings and the timing gearsets and from the main bearings through drilled crankshafts to the crankpins and through tube to the wristpins. The throw-off from the crankpin

lubricates the cylinder and piston walls and the cams and tappets and valves.

Engine Equipment, Power Transmission.

The engines are governed by latest type Monarch governors located between the Stromberg carburetors and the intake manifolds. The sources of ignition current are Bosch high-tension magnetos and the engines are equipped with Westinghouse lighting and starting systems.

The power transmission systems include Brown-Lipe multiple disc clutches for the $3\frac{1}{2}$ and five-ton chassis and Fuller multiple disc clutches for the two-ton chassis. The engines are mounted at three points, on trunnions forward and on rear arms cast integral with the upper sections of the crankcases.

The driving shafts are tubular, the forward sections being coupled to the clutch and transmission gearset shafts by Thermoid flexible joints. The transmission gearsets are selective sliding gear type, having four forward speed ratios, that are suspended amidships at three points from frame cross members, and the rear sections of the driving shafts are coupled to the gearset shafts and the worm shafts of the rear axles by Blood Bros. universal joints, which are oil tight and enclosed.

Rear Axles Built in Parker Factory.

The worm shaft and worm wheel full floating rear axles are built at the Parker factory and these have electric cast steel housings in three sections. They are fitted with Timken roller bearings throughout. The axles have been developed by Parker engineers and are claimed to be specially enduring and efficient. The front axles are steel drop forged I sections. The frames are pressed steel channel section, that of the $3\frac{1}{2}$ -ton chassis being seven inches depth with three-inch flanges and of quarter-inch stock. The frames are suspended on semi-elliptic springs of unusual length, those of the chassis specified being 51 inches length and three inches wide, of eight leaves, forward and 60

inches length and three inches wide, with 16 leaves, rear. The springs are bushed eyes and are fitted with hardened steel bolts.

The relation of the rear axles is maintained by radius rods and these have been lengthened and the forward ends are mounted on the forward hangers of the rear springs on ball and socket joints, instead of on the spring shackles as in earlier machines. The spring shackles have been shortened because of this change, those of the two-ton chassis from $5\frac{3}{4}$ inches to four inches, of the $3\frac{1}{2}$ -ton chassis from $5\frac{3}{4}$ inches to five inches, and of the five-ton chassis from $7\frac{1}{2}$ inches to $6\frac{1}{4}$ inches.

The chassis are built to standards of wheelbase, these being 150 inches for the two-ton chassis and 160 inches for the $3\frac{1}{2}$ and five-ton chassis, but these may be increased to 170 and 180 inches at the option of the purchasers at extra cost. The two larger chassis are regularly equipped with steel wheels, and this equipment may be added to the smaller size when desired, as an extra. The tires are all solids.

The control members and their location are to standards of practise. The service brakes are external contracting on drums on the driving shafts directly back of the transmission gearsets, and the emergency brakes are internal expanding within steel drums bolted to the rear wheels. The areas of the brake shoes are large and the brakes are claimed to be extremely efficient. The chassis are fitted with the Alemite system of lubrication, which insures an adequate supply of grease being injected to all moving parts.

The chassis are sold with the usual equipment, including drivers' seats, front fenders, running boards, electric head and tail lamps, tool box, tools, jack and mechanical horn. When desired the chassis can be equipped with standard types of bodies and, if end discharging, with Wood hoists.

WHY NOT "ACASON ALLEY?"

The Acason Motor Truck Co., Detroit, Mich., lays claim to the right to rechristen New York's Broadway and name it "Acason Alley," because of the fact that theatergoers who are anxious to make the most of their joy time always crown an evening's enjoyment with a ride on one of the 26 Acason trucks lined up along the big thoroughfare after the curtain falls.

These trucks of $2\frac{1}{2}$ and $3\frac{1}{2}$ ton size are painted white and are equipped with elaborate passenger bodies. They take travellers to Chinatown and Coney Island at the rate of from 30 to 35 miles an hour.

GOODYEAR GIRLS CHAMPS.

The girls baseball team of the Goodyear Tire & Rubber Co., Akron, O., on which six of the players are hitting over .500, claims the amateur industrial championship of the United States, having beaten the hitherto undefeated Westinghouse girls' team and the Goodrich and Miller nines. In one game the Goodyear

girls poled out seven home runs. Florence Martin, third sacker, and the demon swatter of the team, made three in one game.

TRUCK STUNTS IN OIL FIELDS.

The McCallon Auto Co., Texas distributor of Available trucks, are justly proud of the part these vehicles are playing in oil field development. The distributors are particularly laudatory of work recently done by an Available truck, which handily carried 31 joints of 10-inch castings, or about 27,000 pounds, a distance of $4\frac{1}{2}$ miles over muddy oil field roads. This same truck was driven 130 miles with an average running time of $11\frac{1}{2}$ miles an hour, including stops, but not counting the night lay-over. The consumption of gasoline was $8\frac{1}{2}$ miles per gallon.

TRUCKS ON 2000-MILE TRIP.

The Northway Motors Co. was in dire need of a machine at its Natick, Mass., plant the other day, which it learned was all ready for shipment at Richmond,

Ind. The company had been getting its consignments over the railroads at a speed of 29 miles in 24 hours. This would not do in this case and it was decided to dispatch a Northway truck over the 1000-mile route for the machine. The truck made the 2000 miles in fast time and the factory had the machine many days ahead of the date it would have arrived had the railroads been used as a shipping medium. The truck averaged 18 miles an hour.

MOTOR VEHICLE OWNERS PAY FOR HIGHWAYS.

R. E. Fulton vice president of the International Motor Co., New York City, manufacturer of Mack trucks, shows in a recent statement that the motor vehicle owner is more than paying his way as far as highways are concerned. His figures point out that motor vehicles pay in taxes and fees a total sum amounting to \$75 per mile for every mile of highway in the United States, improved or unimproved, and about \$24,000 per mile for every mile capable of carrying heavy duty motor traffic.

NEW PLANTS AND EXPANSIONS

HARE'S MOTORS, INC., IS PUSHING FOREIGN BUSINESS.

Although Hare's Motors, Inc., has had its export department established only since February, it has already perfected seven foreign distributorships and special representatives are abroad in large numbers supervising the work in various sections. Others will sail for the Far East and South America this month.

The export department is headed by E. J. Ross, Jr., former manager of the government division of the Locomobile Co. of America. R. S. Krasson, who built the Plattsburg camp and was provost marshal of Paris with the A. E. F., is European district manager, with headquarters at Paris.

William B. Stevens, for 15 years with the United States Rubber Co. and for six years with the Locomobile sales organization, is far eastern district manager, and Walter B. Boyer, an expert in the export field, is South American district manager.

Wm. Carl Chapman, long a Packard man, heads the division of export advertising, which will conduct an aggressive foreign campaign. S. H. Rapp is in charge of shipping and D. B. Hughes, an old Locomobile man, will handle export service.

KISSEL DOUBLES CAPITAL.

The Kissel Motor Car Co., Hartford, Wis., has increased its capital from \$1,000,000 to \$2,100,000. An expansion of business has made the new issue necessary. Plans include plant extensions and increased production.

NEW TRUCK THE "PREMOCAR."

The Preston Motor Corporation, Birmingham, Ala., will not use the name "Preston" on its cars and trucks as originally planned. The product will be known as the "Premocar."

TRAILMOBILE CO. NEW PLANT AT CINCINNATI LARGEST TRAILER FACTORY

The Trailmobile Co., 2901 Robertson avenue, Oakley, Cincinnati, is now occupying its new factory, which has an area of about 130,000 square feet and is the largest plant in the world given over entirely to the manufacture of trailers for use with motor trucks and passenger cars.

The factory is modern to the last degree. It is laid out and equipped according to the most advanced practices of industrial engineering to produce a quality product in quantity. All material is routed through the plant from the receiving platform and stock room in a direct line to the shipping platform.

There is a completely equipped machine shop where parts are machined. Every part is made with jigs and templates and produced in quantity. All are interchangeable and a replacement stock is always carried at the factory.

The equipment includes pneumatic riveters, power shears and planers, radial drills, drill presses, milling machines, shapers, lathes, etc., of the most modern manufacture. There is a complete woodworking equipment, air brush painting installations, etc.

The different shops are operated by individual motors distributed about the plant.

The factory buildings are of saw-tooth construction, beautifully lighted with north light and perfectly ventilated. Everything is brick and steel and concrete—as nearly fireproof as it is possible to make a building.

The plant is located on the main line of the B. & O. railroad and is provided with a long double-tracked switch for incoming and outgoing cars. The inside loading platform has a capacity for four cars, which can be loaded at one time.

Restaurant, lunch counter and modern wash rooms provide the utmost in comfort and convenience for the employees.

REPUBLIC EARNINGS.

The Republic Motor Truck Co., Inc., Alma, Mich., reports net earnings for the six months ending June 30 as \$1,741,618, before taxes, equivalent to \$17.12 a share on the outstanding stock after preferred dividends, as compared with \$188,757, or \$1.55 a share earned in the corresponding period of 1919. Inventories of the company as of June 30 amount to \$6,781,561, as compared with \$5,301,479 last year.

GLOBE TRUCK PLANT SOLD.

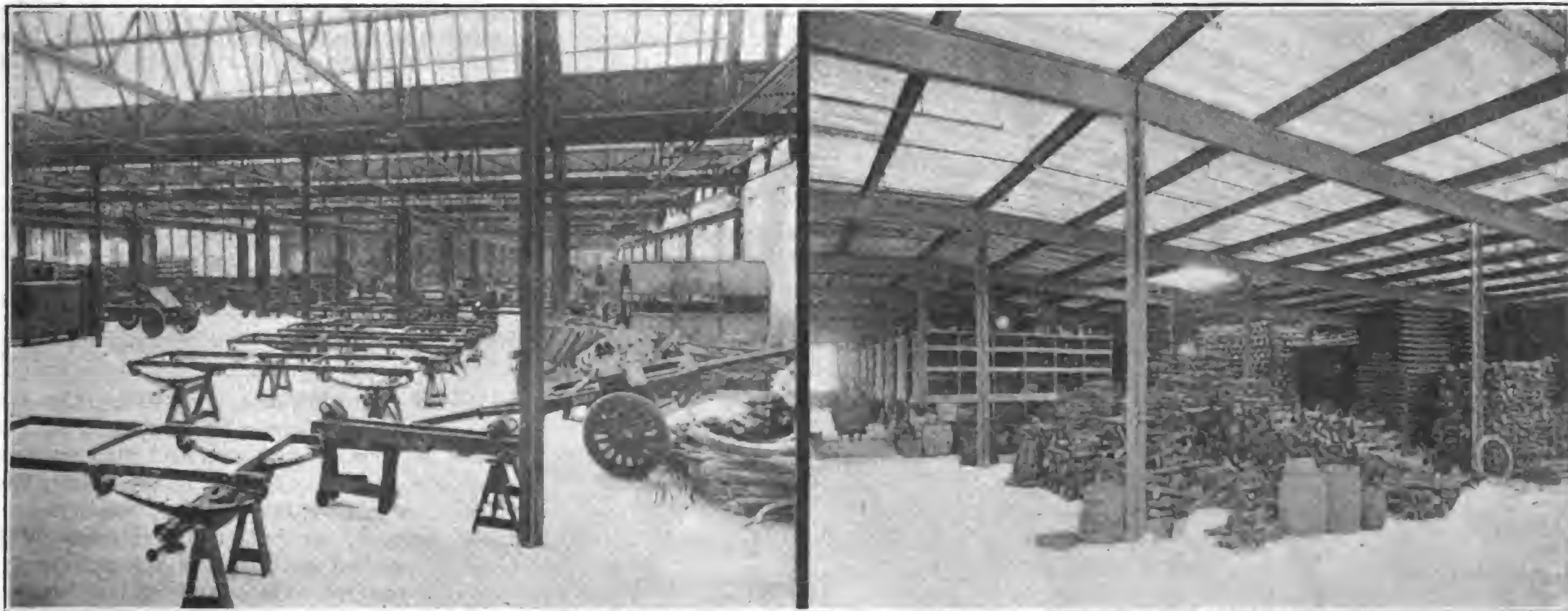
The Spiral Machinery Co., St. Louis, has bought the plant of the Globe Motor Truck Syndicate, at 18th and Brady avenue, East St. Louis, the price for plant and equipment being reported at \$60,000. The property comprises three acres of land, with a large shop building of steel frame construction and a separate office building.

U. S. RUBBER EARNINGS.

The United States Rubber Co. reports for the six months ending June 30 a surplus after charges and Federal taxes equal, after preferred dividends, to \$13.68 a share on \$81,000,000 common stock, compared with \$23.01 on \$36,000,000 common stock for the corresponding period last year.

SINCLAIR EARNINGS.

The Sinclair Co. reports earnings for the first six months of \$15,542,676, after all charges, as compared with \$19,601,235 for the entire year of 1919. The net earnings for July established a new record.



Interior of the New Factory of the Trailmobile Co. at Cincinnati, O.: At Left, a Part of the Main Assembling Floor; at Right, Section of the Parts Stock Room.

NOW BUILDING OR PROJECTED

EXPLOSIVES TRADES' LTD., GETS \$25,000,000 INTEREST IN GENERAL MOTORS

Explosive Trades, Ltd., of London, has acquired a \$25,000,000 interest in the General Motors Corporation of America, according to advices received this month by the United States Department of Commerce. The British company is one of the largest trading concerns in Europe.

KENTUCKY WAGON ADDITION.

The Kentucky Wagon Manufacturing Co., Louisville, Ky., will expend \$1,000,000 in new construction on an 18-acre site just purchased on Eastern Parkway. Work will be started within the next two years, sooner if conditions warrant. In the new plant 1000 workers will be employed, which will give the concern a working force of 1900 and 67 acres of shop space. President R. V. Board states that the new additions will be used exclusively for the manufacture of automobiles, motor trucks and accessories.

HUFFMAN RECEIVER ASKED.

A stockholders' suit filed at Omaha, Neb., asks a receivership and accounting for Huffman Bros. Motor Co., manufacturer of motor trucks and passenger cars at Elkhart, Ind. The officials maintain the suit is brought merely to embarrass the company.

NEW AMERICAN-LA FRANCE STOCK.

Stockholders of the American-La France Fire Engine Co. have approved a proposition authorizing the issue of \$1,000,000 preferred stock. The entire increase will be offered to employees of the company.

BETHLEHEM RECEIVERSHIP.

With the company's assent Clinton E. Woods, general manager since May, has been appointed receiver for the Bethlehem Motors Corporation, Allentown Pa. with authority to continue the business as a growing concern. Reports show the assets to be \$4,900,000 and the liabilities \$3,000,000, proving the company entirely solvent.

Lack of sufficient capital to meet maturing obligations is the cause of the embarrassment of the concern. This is said to have been caused by sinking too much capital in the development of the corporation's plants in Allentown and Pottstown and neglecting to reserve sufficient cash for operation expenses. The concern filed an answer to the suit, joining in with the creditor's application.

The largest creditors are banks in New York, Boston and Chicago, with claims totaling \$1,700,000. Court action was taken for the purpose of conserving the assets and to protect stockholders.

REO PLANT AT TOP SPEED.

The Reo Motor Car Co., Lansing, Mich., looms up during the present slump in the industry with a record volume of business for August and even more surprising total of sales in sight for September. R. M. Scott, vice president and general manager, reveals the fact that the company produced and sold more automobiles and speed wagons in August than in any month since the war, while its total volume of business counted in dollars was greater than in any month of its history.

Dealers' orders for cars and trucks for September delivery are already far in excess of the possible output of the Reo plant. September sales will exceed those of August to whatever extent the factory capacity permits. The company has 5200 employees on its payroll, more than ever before. All departments are working full time and many of them overtime.

CONTINENTAL MOTORS CORP. MAMMOTH POWER HOUSE AT MUSKEGON

The Continental Motors Corp., which always meets the issue half way, is preparing for increased production by the building of a huge power plant at Muskegon, Mich., which will care for the greatly increased manufacturing facilities at the Muskegon works. At Muskegon the entire output of four-cylinder truck motors is produced, as well as all of the foundry and drop forge work for both the Detroit and Muskegon plants.

Visitors who inspect the Detroit plant of this company are amazed at its immensity. They will be further amazed at the information that the Muskegon factory is even larger.

This new addition to the already most complete factory equipment at Muskegon will make the Continental plant independent of the local power supply. It will insure the continual operation of their complete equipment regardless of local conditions.

The power plant is being erected on land that has been reclaimed from Lake Michigan. Reclamation is going on continually in order to make room for future factory expansion.

This policy of preparing for increased production is characteristic of Continental Motors Corporation, and indicates that these largest manufacturers of high quality gasoline motors have faith in the future of the industry, as well as faith in the future demand for motors that bear the "Red Seal."

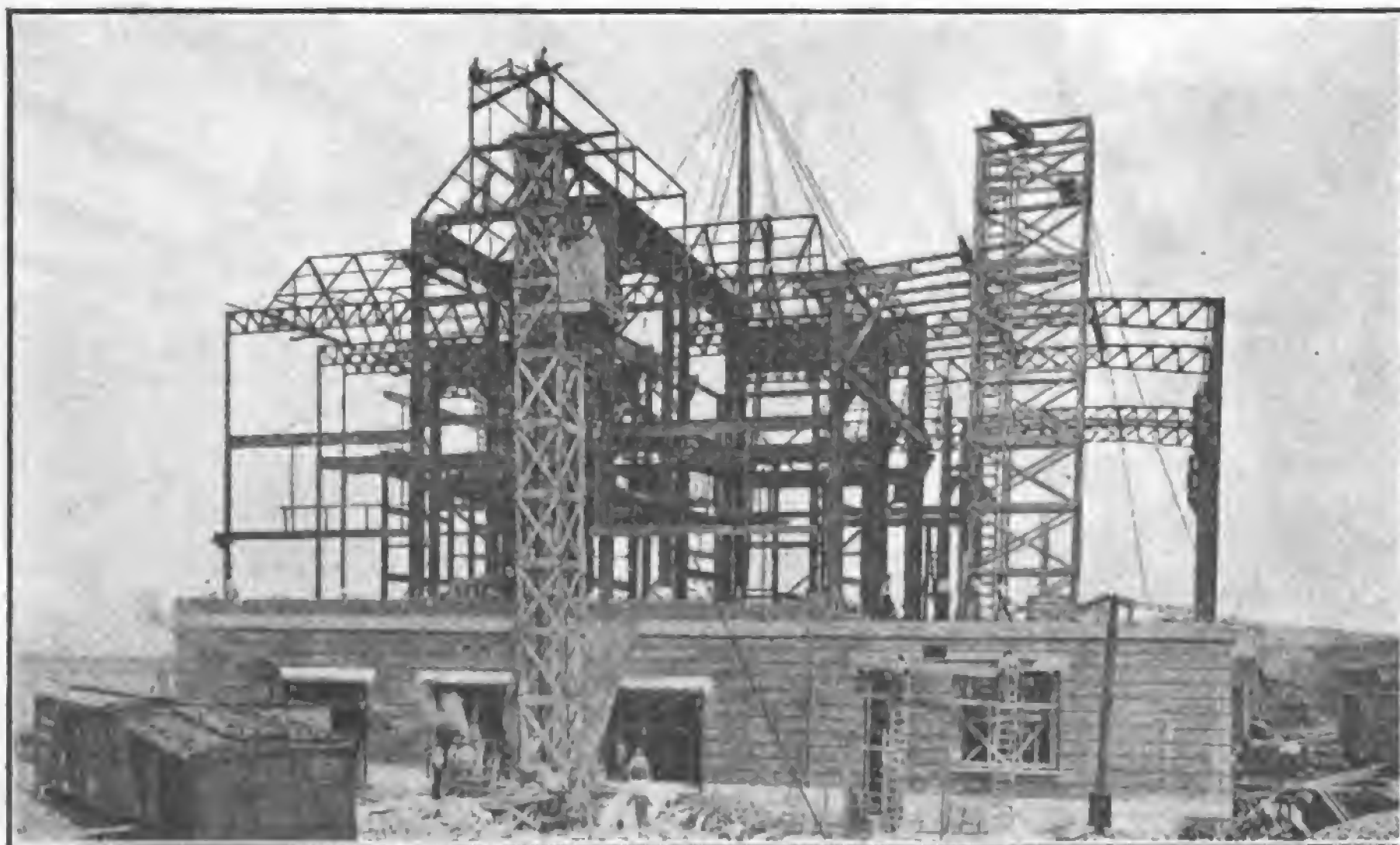
LORAIN IN PRODUCTION.

The Lorain Motor Truck Co., Lorain, O., is in production on its two-ton truck and is now turning out two a day. This number will be doubled when a new addition is completed. The present plant comprises two buildings, affording 10,000 square feet of floor space. The new truck is made up of standard units. The price is \$3250.

The company was organized the first of the year and the officers are: President, J. C. Hayes; vice president, M. J. Menninger; secretary, L. J. Menninger; treasurer, H. T. Jackson; general manager and designing engineer, E. C. Jurgens.

HARE'S MOTORS BOOKLET.

Hare's Motors, Inc., operating the Locomobile Co., Mercer Motors Co., and the Simplex Automobile Co., and also producing and distributing the Riker truck, has issued a neat little booklet, touching on the history, organization, purpose and ideals of the corporation. Photographs of the general offices and of leading executives of the concern are reproduced. This attractive publication will be forwarded on request.



Big Power House Now Being Erected by the Continental Motors Corporation at Its Plant at Muskegon, Mich.

ACTIVITIES OF THE INDUSTRY

REPUBLIC CO. EARNINGS.

The Republic Motor Truck Co., Alma, Mich., shows greater earnings for the first half of 1920 than for any full year in the company's history.

These earnings before Federal taxes were \$1,741,618 as compared with \$188,751 in the same period last year. The report shows notes and accounts receivable of \$1,226,610, cash of \$1,162,964 and inventories of \$6,781,561. The liabilities include: Purchase money obligations, \$3,089,281; notes and accounts payable, \$1,873,826; accrued liabilities, \$284,970; miscellaneous current liabilities, \$110,969. The earnings for the half year were equivalent to \$17.12 a share on the 100,000 shares of no par value common stock outstanding after deducting preferred dividends. The balance sheet as of June 30 shows total current assets of \$9,179,849 and current liabilities of \$6,106,629, making a net working capital of \$3,073,220.

MACK TRUCK MAKER'S BOOK.

The International Motor Co., 64th street and West End avenue, New York city, maker of the Mack truck, has issued a book entitled "Motor Trucks from a Practical Engineering Standpoint," which is invaluable not only to owners and prospective owners of motor trucks, but to the student, driver and mechanic. Every feature of motor truck construction and operation is clearly explained. Illustrations and diagrams are used where words fail to tell the exact idea which is being elucidated.

SINCLAIR PUBLICATION.

The Sinclair Refining Co., Chicago, Ill., has published an anniversary issue symbolizing what Sinclair stands for today. Details of each branch of the great organization are given, its strength in petroleum production, transportation, refining and distribution being clearly outlined. A map affords an insight into the mammoth scale on which the company operates.

TO INCREASE RELIANCE OUTPUT.

The Reliance Motor Truck Co., Appleton, Wis., manufacturer of motor trucks and axles, looks for a clearing up of the material situation by Sept. 1 and plans at that time to inaugurate a highly increased production schedule. The new executive personnel of the Reliance company follows: President and general manager, A. G. Brusewitz; vice president, Charles Schmidt; secretary, Henry Huplauf; treasurer, W. G. Jamison; directors, Harry Leppla, Matt Rossmeissl, Wolford P. Tremel, John Herman, William Geenen.

BIG GOODYEAR SALES.

The Goodyear Tire & Rubber Co.'s gross sales for July reached \$17,185,113, against \$15,989,349 in the same month last year. Sales for the first nine months of the 1920 fiscal year amounted to \$162,202,467, as compared with the total 1919 sales of \$168,914,982. The year's sales are expected to go well beyond the \$200,000,000 mark.

PRODUCING PRESTON TRUCKS.

The Preston Motors Corporation, Birmingham, Ala., has started production in automobiles and trucks at its main plant, which was dedicated Aug. 2. The corporation has been turning out cars for several months at its No. 2 plant at North Birmingham.

HEIL CO. CIRCULAR.

The Heil Co., Milwaukee, Wis., has issued circular No. 114, which describes the compartment tank trucks it produces. These tank trucks are in various designs and range in capacity from 300 to 1500 gallons.

GARFORD \$250,000 BUILDING.

The Garford Motor Truck Co., Lima, O., has awarded the contract for a \$250,000 office building to be built this fall. A number of additions to the plant are also being planned.

PIERCE-ARROW PRICES.

The Pierce-Arrow Motor Car Co., Buffalo, N. Y., announces the prices on its new truck models and special equipment as follows: Two-ton with lazy back seat and regular equipment, \$3750; 3½-ton, similarly equipped, \$4950; five-ton, \$5700. Cab with fore doors and windshield, \$150. Starting equipment, including starting motor, switch, gear ring and larger battery (120 ampere-hour), \$125. This is an increase in price of \$200 as compared with the former five-ton model and a decrease of \$550 as compared with the former two-ton model. The latter model sold formerly with a cab as standard equipment; now it comes without cab but with electric light.

20,000 SINCLAIR OWNERS.

The Sinclair Consolidated Oil Corporation now has 20,000 stockholders, according to statements made by A. J. Johnson & Co., members of the New York Stock Exchange. The earnings for the first half of the year were at the annual rate of \$8.26 per share. The asset value of the company's shares figured as of Dec. 31, 1919, was at the rate of \$55.41 a share.

BIG GOODYEAR SALES.

The August sales of the Goodyear Tire & Rubber Co., Akron, O., exceeded \$19,000,000. This amount is \$2,600,000 more than sales of July, and brings the total sales for the first 10 months of the fiscal year to more than \$280,000,000, or \$13,000,000 in excess of the total business for the entire fiscal year of 1919.

STANDARD PARTS RECEIVERS.

Frank A. Scott and J. O. Eaton were appointed by the Federal court in Cleveland, O., on Sept. 1 as receivers for the Standard Parts Co., the \$25,000,000 automobile accessories company located in that city. The Erie Malleable Iron Co., Erie, Pa., filed the petition asking for a receiver.



The Plant of the Traffic Motor Truck Corp., St. Louis, Mo., Which Is Devoted to the Production of Standardized Two-Ton Vehicles, Illustrating the Remarkable Growth of the Industry.

INDUSTRIAL PRODUCTION NOTES

TOWER CO.'S CAPITAL STOCK GOES UP TO \$2,500,000.

The Tower Motor Truck Co., Greenville, Mich., increased its capital stock from \$500,000 to \$2,500,000 at the annual meeting of stockholders at its general offices in Greenville, Sept. 2. The largest number of stockholders ever present at any of the company's meetings was in attendance. Directors were elected and other business transacted.

To take care of the production schedule of 1400 trucks for the coming year material is being hauled for an addition to the present factory buildings. The addition will be 60 by 100 feet, part of which will be two stories, and will add about 9000 square feet of floor space to the present 25,000 square feet.

A very extended and satisfactory report was made relative to the business of the corporation for the past year and also ways and means were discussed for a very material increase in production for 1921.

ACME DIE-CASTING BRANCH.

The Acme Die-Casting Corp., Bush Terminal, Brooklyn, N. Y., specializing in the production of high grade zinc, aluminum, tin and lead alloy die-castings, has opened a branch office in the machinery exhibition sales department of the Philadelphia Bourse, in charge of Edward McK. Hunt, who will handle the company's big business in New Jersey, eastern Pennsylvania, Maryland, Delaware and the District of Columbia. Another new office is planned for Newark, N. J.

TO MAKE POPPET VALVES.

The American Valve Rotator Co., recently incorporated with \$100,000 capital at Milwaukee, will manufacture a newly patented device for rotating poppet valves, which invention was perfected at the plant of the Waukesha Motor Co., Waukesha, Wis., under the direction of H. L. Horning, president and chief engineer.

PATRIOT FACTORY BRANCH.

The Patriot Motors Co., Lincoln, Neb., is to establish a direct factory branch at Oklahoma City, Okla., under the management of Mart M. Adams, for several years factory sales manager.

DETROIT CONSOLIDATION.

The Detroit Brass & Malleable Works has been formed from a consolidation of the Detroit Brass Works and Detroit Valve & Fittings. There is no change in policy or management.

NOW REYNOLDS SPRING CO.

The Reynolds Spring Co., is the new name of the former Jackson Cushion Springs Co., Jackson, Mich.

LA FRANCE STOCK ISSUE.

The shareholders of the American La France Fire Engine Co., Inc., ratified at a special meeting this month the plan of the directors to increase the authorized preferred stock from \$2,000,000 to \$3,000,000.

The purpose of the increased issue is to provide stock for purchase by employees of the company who have just completed, under a weekly savings plan, a purchase of \$400,000 Liberty Bonds.

The company's plants at Elmira, N. Y., are operating at maximum capacity and orders are on hand sufficient to continue operations on this basis for the next five months. Earnings so far in 1920 are larger than for any similar period in the history of the company.

SOUTHERN MOTOR CHANGES.

The Southern Motor Manufacturing Association, Ltd., Houston, Tex., which is producing trucks, tractors, trailers and commercial bodies, and will soon be turning out passenger cars, has elected Dave D. Cahn, a member of the board of trustees, active vice president, vice E. R. Reid, who has resigned to enter business for himself. The association has also separated the offices of treasurer and secretary, C. E. Shively continuing as treasurer. M. J. Kain, who was executive secretary to President Jacques E. Blevins, has been named as secretary. W. E. Hutchinson has been appointed purchasing agent.

PETITION IN BANKRUPTCY.

The Arkansas Truck & Body Co., Texarkana, Ark., has filed a voluntary petition in bankruptcy, with liabilities listed at \$38,500 and assets at \$22,000. Attorney Will Steel is receiver. Arthur Dean is president of the company and G. O. Barnard secretary.

WAUKESHA DOUBLES CAPITAL.

The Waukesha Motor Co., maker of heavy duty engines, has increased its capital from \$1,000,000 to \$2,000,000 in order to finance a necessary expansion of business. The increase is being largely absorbed by original stockholders.

MOTOR WHEEL DIVIDEND.

The Motor Wheel Corp., Lansing, Mich., declared a dividend of two per cent. to common shareholders of record Aug. 7. More than \$12,000,000 in orders are on the company's books and monthly earnings are about \$100,000.

REMOVES TO BRIDGEPORT.

The Liberty Mfg. Co., maker of four-cylinder air-cooled engines, has increased its capital stock from \$250,000 to \$3,000,000, and has removed from New Haven to Bridgeport, Conn.

BETHLEHEM PLANT GOING.

The Motor & Accessory Manufacturers' association has appointed a merchandise creditors committee to cooperate with a banker's committee in arranging for the continued operation of the plant of the Bethlehem Motors Corporation, Allentown, Pa., which concern is in financial difficulties, although its assets are said to exceed liabilities and a big volume of unfilled orders are on its books.

The merchandise creditors will be represented by Alexander W. Copland, president of the Detroit Gear & Machine Co.; Harry Barit, assistant treasurer of the Detroit Pressed Steel Co.; Charles H. Burr of the S-K-F Industries; I. K. Schnaitter of the Willard Storage Battery Co., and S. S. Meyers, general counsel of the Motor and Accessory Manufacturers' association.

NEW ELECTRIC TRUCK PLANT.

The Commercial Truck Co., Philadelphia, E. R. Whitney, president, manufacturer of electric trucks, of which the American Railway Express has a fleet of 212, is putting up a mammoth plant on a new 14½ acre site at Hunting Park avenue, American street and Rising Sun avenue, which will double the present manufacturing capacity.

The Commercial Truck Co. was formed in 1906 and has gone steadily forward until its present quarters have been outgrown. The new structure will be of concrete and steel construction throughout and will be equipped with the most scientific, labor-saving machinery.

U. S. CONTRACT TO ROWE CO.

The Rowe Calk & Chain Co., Plantsville, Conn., has been awarded a contract by the postoffice department for traction chain equipment to be used on solid tired trucks for the year ending June 30, 1921.

FORD BRANCH PLANT ENLARGED.

An addition to give 50 per cent. more space is being added to the Milwaukee plant of the Ford Motor Co., with part of the \$8,000,000 recently appropriated by that concern to build branch plants.

CAPITAL NOW \$6,000,000.

North East Electric Co., Rochester, N. Y., has increased its capital from \$3,000,000 to \$6,000,000 and will use part of its new capital to construct new buildings.

LAVINE ADDITION READY.

The Lavine Gear Co., Milwaukee, Wis., plans to occupy the third large addition to its factory by the first of the coming month.

NEW ANGLES OF OLD SUBJECTS

BETHLEHEM MOTORS CORP.

BEING REORGANIZED WITH BIG CAPITAL

The Bethlehem Motors Corp., Allentown, Pa., which is enlarging and strengthening its organization through the co-operation of a leading New York banking institution, turned out a record production of 450 trucks in August and has set a mark of 500 in September. The company has orders for all the trucks it can possibly produce. A steady increase in production is anticipated.

A complete reorganization of the plant will be announced shortly. Men of the highest standing in the financial world will be added to the executive personnel.

The company has been engaged in a drive for several months to enlarge its distribution staff and this department is now looked upon as one of the strongest in the industry. The company has one order amounting to millions of dollars from England and its product is in demand in almost every country in the world. Changes have been made in its models which are counted upon to put its trucks on the highest plane in its field.

CITIZENS TRUCKING CO. OF N. Y. HAS PLAYED ITS PART.

The Citizens Trucking Co., New York city, which was organized by the Citizens Transportation committee, to fight for the impartial handling of merchandise in transit regardless of strikes, has won its campaign, union truckmen having agreed to haul from the piers of the coastwise steamship companies. The Citizens Trucking Co. has therefore practically ceased operations, maintaining only three trucks for emergency work and to form a nucleus for a fleet in the event that there is a further interruption of transportation through strikes or otherwise.

Profiting by experience a large number of trucks could be mobilized in a very short time should these be needed.

BIG GOODYEAR BUSINESS.

Goodyear Tire & Rubber Co.'s August sales were \$18,962,009.76, surpassing the July sales of this year and the August sales of last year by well over a million dollars. Sales for the first 10 months of the fiscal year are \$181,115,964.39, which exceeds the total sales of the last fiscal year by \$12,200,981.56. Twelve years ago this company was doing a business of but \$2,000,000 a year.

ARVAC EASTERN REPRESENTATIVE

The Arvac Mfg. Co., Anderson, Ind., producer of well known universal joints, has appointed F. L. Valliant as eastern representative, with headquarters at Anderson. Mr. Valliant was formerly with the Jones Motor Car Co., Wichita, Kan.

GOODYEAR PAYS FOR IDEAS.

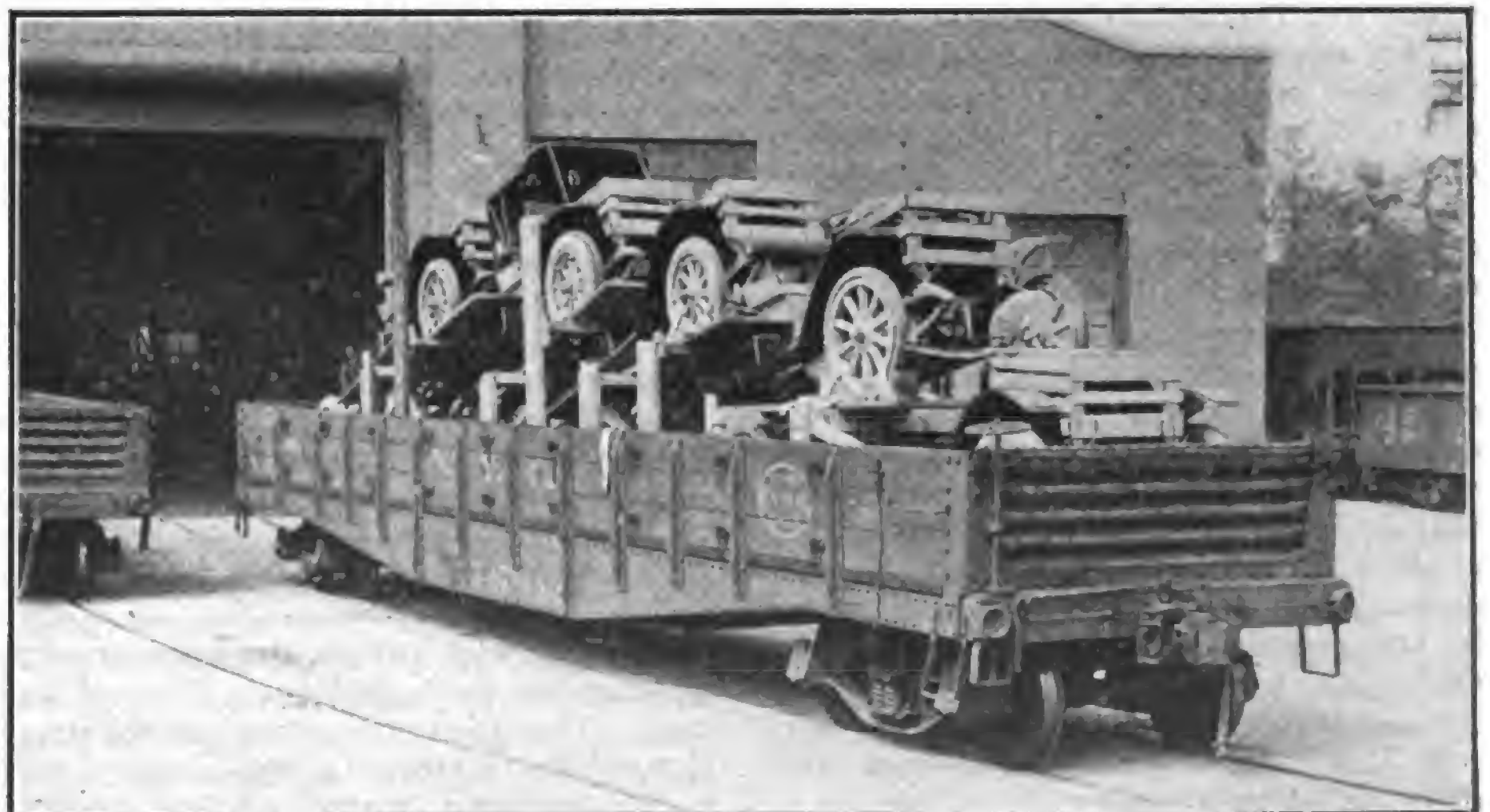
The Goodyear Tire & Rubber Co. is paying nearly \$1000 for suggestions from employees as to improving methods, changing systems or lessening fatigue. Money awards from \$5 to \$100 have been paid in the past seven years, 2217 out of more than 50,000 suggestions having been found practicable. One man has won 18 awards for ideas and another, a plumber in the janitor service, has received money for eight ideas, most of which suggested improvements outside his department.

WHITE TRUCK LOADING PLAN MAKES ONE CAR CARRY FIVE MACHINES

The White Co., Cleveland, O., believes that there is always a way out. Meeting and overcoming big problems is part of the everyday routine at the company's plant. The shortage of railroad freight cars has been accepted as a fact by many concerns which have made the best of a bad situation. The White Co., however, looked for the way out and found it.

By a little ingenuity the company is now making one freight car do the work of two, as shown in the accompanying illustration. This is done by the economical use of space, the latter being a highly important commodity in shipping circles these days. If not only the truck manufacturers, but all industrial plants, would show the same degree of loading efficiency, the car shortage would soon be a myth.

In the picture are depicted five chassis loaded for shipment on one car at the White company factory in Cleveland. By analyzing the loading problem and getting more trucks on a car than just enough to cover the floor space, the White company is making railroad cars carry twice the load they formerly did.



A Railroad Gondola at the Factory of the White Co., Cleveland, O., Laden with Five Trucks. A Decided Saving by Study of Transportation Possibilities.

TRUCKS SAVE BIG FARMERS TIME AND MONEY DURING HARVEST PERIOD

A survey by the B. F. Goodrich Co., Akron, O., shows that 26 per cent. of the grain received at 2000 mid-west elevators is hauled by motor truck. Only a few years ago the horse and wagon had this field entirely to themselves. The investigation covered the states of Arkansas, Oklahoma, Missouri, Kansas, Montana, Idaho, Iowa, Nebraska, Illinois, Wisconsin, Minnesota and the Dakotas.

According to the survey, farmers in Nebraska, Minnesota and South Dakota are employing motor truck transportation on a greater scale than in other sections of the grain belt. In these states practically all elevators are being equipped with automatic scales and dumps so that the maximum service can be obtained from the trucks. The farmers and elevator men as well, are becoming enthusiastic truck advocates and see a great future for them throughout the grain belt. The same view is held by elevator men in all sections of the grain belt, even where failure of crops in past years have prevented farmers from investing heavily in trucks as yet.

The trucks have saved valuable time for the grain grower at a season when every hour is precious. It has enabled him to get rid of his crop and prevent loss formerly incurred from piling it in fields and inadequate warehouses. Moreover, it has proved of great assistance to the railroads, permitting expeditious loading of cars and relieving the roads of carrying wheat on short hauls.

It is evident from the reports that the truck came to the grain growers just in nick of time, enabling them to handle the bumper crop in a way which could never have been equaled with horse and wagon. The truck stepped into the breach and has proved such an efficient helper that it has won a life long job.

BANKER THE HOLD-UP MAN OF PROGRESS

(By LON R. SMITH.)*

BILLIONS for railroads—not one cent of credits to truck makers and dealers!

Sixty miles of coal cars, loaded, jammed in an endless conglomeration, near Baltimore, according to a recent press report.

And yet we wonder why there is a coal shortage!

At a time when the nation needs every truck that can possibly be built in every factory of the nation—we are faced with such a situation as outlined above.

Unending delays and jams in freight transportation, and yet plenty of room on the highways of the nation for millions of tons of freight—if we only had the trucks to move it.

Carriers of all kinds cry for trucks. Farmers are more "sold" on trucks for their farm now than ever before in the history of the industry. One writer said in a recent publication that the State of Texas alone could absorb every truck and every tractor that the nation could produce—that is, this tremendous Lone Star empire has the potentials to absorb this output.

And yet it seems that bankers in every section of the country are refusing



Lon R. Smith, General Sales and Advertising Manager, Midwest Engine Co., Indianapolis, Ind.

credits to truck dealers and tractor dealers and truck and tractor makers. These bankers intimate that their action is

based on the action of the Federal Reserve Board and the Federal Reserve Board in turn says it may be the regional directors doing it but it isn't the Federal Reserve Board. The regional directors pass the buck back to the bankers.

And the bankers are now getting 7%, 8% and even higher for what money they put out, passing the buck back to the Federal Reserve Board in justification. It's a merry game, gentlemen, but it is not getting us anywhere in solving the high cost of living.

Meanwhile the truck industry and the tractor industry, both as essential to the nation as bread and meat is to the individual, may languish, slow down or die. What do the financiers (?) care about this? Not much, evidently—and it behooves us to stir up the dead bones behind the bronze grills and the mahogany desks in Washington and throughout the entire nation.

But where is the club? Politics? Maybe—maybe not. But we of the manufacturing industry must get that club. If not now, oh what a wicked whack we will swing—eventually!

*General Sales Manager, Midwest Engine Co., Indianapolis, Ind.

OKLAHOMA MILLING CO. DEVELOPS LARGE TRADE WITH TRUCK FLEET

In Oklahoma where transportation facilities are appalling the Shawnee Milling Co., of Shawnee, is one of the few institutions which has no cause for worry. The reason is that this organization has a fleet of 20 trucks which are going to and from dozens of towns every day in the year which could not possibly be reached without the machines. This concern has 11 mills in the southwest and its trade covers an extended territory. These trucks penetrate flourishing towns not reached by railroads.

The splendid work accomplished with this fleet means that the company must add to its equipment frequently, which is cheerful information for the Kalamazoo Motors Corporation, Kalamazoo, Mich., the Shawnee Milling Co. having decided to standardize on this make.

Not only have the trucks kept the people of the southwest supplied with that most valuable staple, flour, and kept the deliveries of the company up to date when the railroads have fallen down dismally, but they have maintained the credit and financial standing of the concern against all odds. The car situation in the southwest is so deplorable that Oklahoma banks have refused to make further loans on grain paper.

In this connection the American Miller in an editorial says:

"Many millers will be badly off, in fact, have already felt the restricting influence of the credit pronouncement. But

the Shawnee Milling Co. is in a strong position with its truck fleet. Not only do its local deliveries keep down the big surplus of flour that would inevitably accumulate if it did not have an outlet by motor truck, but its credit position is also strengthened, as all mills find little difficulty in collecting for the flour when its own men make the deliveries. Also, it is in a position to buy wheat much more advantageously than mills or dealers who are less favorably situated. In short, the truck fleet this year will pay its way as never before, and from the very first it has saved money and made new business for the firm."

NEW ZEALAND SEEKS TRACTORS.

The Farmers' Union Trading Co., the second largest farmers trading cooperative association in New Zealand, is to open a New York office about Oct. 1, which will purchase supplies for the dominion and sell New Zealand products. Tractors are badly needed in various sections of that country. New Zealand imported \$865,834 worth of agricultural machinery last year against \$465,374 in 1918. This is a gain of \$400,090 in actual value, but represented by percentage it is 85.9, a very promising progress.

TRACTORS IN ROAD GRADING.

Tractors with rubber tires are proving popular for road grading in Central Illinois. The tires are of block construction. The tractors are replacing horses in hauling the heavy grading outfits. They do not damage the pavements and are cheaper than any other form of haulage.

TIGHT MONEY NO OBSTACLE TO TRUCK INDUSTRY SAYS H. W. ACASON

H. W. Acason of the Acason Motor Truck Co., Detroit, Mich., has just completed tours of the Atlantic and Pacific coasts, following a trip from Los Angeles to Spokane with visits to New York, Philadelphia and Springfield, Mass., and is back at the factory with new faith in the future of the motor truck industry.

Mr. Acason says that no power on earth can prevent the truck from coming into its own. In this connection he sees only good in the present financial stringency. Among other things he says: "None of our dealers have any trucks on hand and the so-called tightness of money is resulting in truck sales being on a more substantial basis and therefore better for the dealer in the long run. More cash is changing hands in truck sales than before, which is a much needed step in the right direction."

THREE L-M AXLE BUILDINGS.

The L-M Axle Co., a \$1,500,000 Cleveland, O., corporation, is building three factory units and will employ 1000 men when full production is reached.

OHIO HUFFMAN DISTRIBUTOR.

The L. J. Matley Motor Sales Co., 3470 Salem St., Indianapolis, Ind., has contracted to distribute the Huffman truck in Ohio.

BUT 22 OVERLOADED TRUCKS FOUND IN 10-DAY SURVEY OF MILWAUKEE TRAFFIC

(By E. G. DORSCH.)*

Prompted by recent propaganda alleging that overloaded motor trucks were mainly responsible for damage done to highways, the Parker Motor Truck Co., Milwaukee, investigated local conditions, bringing out some very interesting facts.

Covering a period of 10 days those trucks observed being overloaded and overspeeded were recorded, there being a total of 31 such trucks noted during that period.

Twenty-two were overloaded and the remaining nine were overspeeding. Happily none of the overloaded trucks were traveling at more than a moderate rate of speed.

While these 31 trucks represent a very small portion of the total number operating in the city, it is true that some truck owners are at fault in this respect.

The worst case of overloading discov-

ered was that of a five-ton dump truck carrying 11 tons of scrap steel. What can that owner gain by burdening a five-ton truck with an 11-ton load?

True, his present profits may show increase without any apparent damage being done to the truck but such constant overloading will soon result in an increased operating expense and a decided shortening of the truck's period of usefulness.

Most motor trucks are designed to carry a reasonably greater load than indicated by rated capacity. This is done as a measure of safety and should not be taken advantage of by the owner.

The proper size of tire necessary to handle capacity load is determined by skilled engineers and when trucks are overloaded is it any wonder that tires go to pieces or that trucks are charged with damaging pavements?

Just as a horse breaks down from over-

work so will the motor truck become incapable of doing full duty after being subjected to constant overloading.

There is hardly a single part but what suffers when the truck carries an excessive cargo. Bearings, wheels, axles, springs, frames and transmissions become prematurely worn and in the end the owner pays for his bad management in diminished truck life.

Local ordinances regulating motor trucks will usually take care of overspeeding, but the truck owner has it largely left to his own judgment concerning the load he will carry.

No truck manufacturer will encourage overloading and no owner should indulge in it. Public opinion is in favor of the truck and will remain so as long as we cooperate in preserving public highways.

*Service manager Parker Motor Truck Co., Milwaukee Wis.

RECENT INCORPORATIONS.

General Guaranty Co., Wilmington, Del., to deal in automobiles. Capital \$4,000,000.

Temme Spring Corp., Wilmington, Del., to manufacture springs for automobiles. Capital \$2,000,000.

Missouri Motor Equipment Corp., Dover, Del. Capital \$600,000.

Service Spring Co., Wilmington, Del., to manufacture automobile springs. Capital \$750,000.

At Sisterville, W. Va., a \$2,500,000 corporation has been formed to manufacture a transmission and gear system invented and patented by Benj. F. Webb, vice president of the Sisterville Acetylene Welding Co., and Andrew J. Karl.

RAINIER BOOKLET.

The Rainier Motor Corporation, New York city, has issued an attractive booklet, in which are a host of letters from pleased buyers of Rainier worm-drive trucks testifying to their appreciation of the utility of the Rainier product. The fac-similes of the originals are shown in convincing style. The letters have been picked from among the hundreds on file to show real performances under all manner of conditions. Many of the firms who sign these letters are nationally known and their signed recommendation of Rainier trucks is a striking testimonial to the worth of these vehicles.

SOUTH AFRICA USING TRUCKS.

In 1918 and 1919 British South Africa imported motor trucks and chassis valued at \$538,984, those from the United States being valued at \$215,610, from Canada at \$186,567, and from the United Kingdom at \$136,807.

A structure 70 by 200 feet now building at Memphis, Tenn., will be occupied by a branch of the Samson Tractor Co.

N. A. D. A. WARNS DRIVERS TO RESPECT LAWS DURING "DRIVE-AWAYS"

The National Automobile Dealers' association in Bulletin No. 38 issues a warning to dealers to see that drive away crews respect the rules of the road and regard the rights of others. National, state, municipal and human laws have been violated with great frequency by these convoys to the discredit of the industry.

The bulletin says in part:

"More care must be used in the selection of drive-away crews. This is becoming more apparent every day from complaints being received at headquarters of the National Automobile Dealers' association.

"There are convoys whose conduct is such that a continuation of their practices for six months will mean that convoys virtually will be ruled off the roads when the legislatures of many of the states meet next year.

"It is well known that if new cars are driven from the factory at high speed mechanical difficulties will occur later. This seems to be ignored by those in charge of the drive-away who have a desire to cover as much mileage in a day as possible. Some force their mounts to do better than 45 miles per hour in many instances. This is a violation of the laws most everywhere and has aroused localities through which convoys pass to the extent that whole convoys (which in many cases are not the offending one) are being delayed. All this because of disregard for public rights by those whose sole aim is to get over the road in as short a time as possible regardless of consequences.

"To such an extent is the common courtesy of the road being violated and positive laws of the various states, coun-

ties and villages being broken, that we are assured that every effort will be made to impose harsh restrictions on drive-aways. Heavy fines and imprisonment surely will result if there is not a decided effort made by those in this work to be more considerate, and the use of better judgment on the part of those in charge of the convoys.

"This is issued to dealers who will find it more and more necessary to drive from the factories, as a general warning, that every care should be used to select leaders for the fleets, investing if necessary a little more money in compensation for a better leader who can lead and who can control the drivers of the respective care of the fleet that he has charge of. Dealers who are thus protecting their interests and that of their customers will join with authorities in the prosecution of those who, being warned, continue their recklessness."

GRAMM-BERNSTEIN PRODUCTION TO BE DOUBLED.

The Gramm-Bernstein Motor Truck Co., Lima, O., which is now capitalized at \$5,000,000, is selling \$2,000,000 in common stock in order to increase its factory capacity. It is intended to double the annual production of 4800 trucks. The first 20,000 shares are selling at \$12.50. The balance will probably be offered at a higher price.

ACE CORPORATION IN CREDITORS' HANDS.

The Ace Motors Corporation, Philadelphia, is in the hands of a creditors' committee, its trouble being due to transportation difficulties and the short money situation.

The entire eighth floor of the Kerr building, 44 Beaver street, New York city, is now occupied by the New York Overseas Co., Inc., exporter and importer.

TIRE YARN TRUCKMAN SELLING HORSES TO BUY MORE MACHINES



Four of the Five-Ton Pierce-Arrow Trucks of M. McCarthy's Fleet at New Bedford, Mass., After a Four-Day Battle Making 70 Miles Through Last Winter's Big Storm.

MORTIMER McCARTHY, who is engaged in general hauling, with headquarters in State street, New Bedford, Mass., has 12 trucks and 64 horses in service.

Is he going to get any more horses?
Nay.

Is he going to buy more trucks?
You bet.

Mr. McCarthy feels that he already has enough cash invested in hauling equipment. He will dispose of a number of his horses as soon as he finds a market for them and when he does he will be in the market for more trucks.

Mr. McCarthy does not keep cost records, but his profit and loss account shows that he is making money and the trucks have not only answered every demand made upon them, but have given such prompt and efficient service to his customers that his patronage has increased and his business expanded through their instrumentality.

He keeps his trucks in fine condition, pays good salaries to drivers, gets a higher class of pilots, keeps his trucks busy and runs them as carefully and economically as the quality of service

permits. He is confident that he is getting all that is possible out of each vehicle and that there is no waste in connection with their operation.

While Mr. McCarthy does all manner of hauling the greater part of his work is for two lines of industry. He hauls tire yarn to nearly all points in the New England states, in addition to New York states, and also carries building materials in bulk for contractors. The call for more trucks was made evident early in the present month when, although practically all the tire fabric mills were closed or running short, and he was doing hardly any hauling in that line, he was obliged on several days to engage extra trucks to augment the dozen he has in service.

Hauls Tire Yarn in Bulk.

Danielson and Putnam, Conn., and Pawtucket, R. I., are three points to which the McCarthy trucks ply regularly with loads of tire yarn. Hundreds of tons are hauled to the Jenckes Spinning Co., at Pawtucket, which supplies fabric in greater volume to all the leading tire manufacturers. On these trips the trucks are loaded to capacity, the yarn

being on beams. In most cases the trucks have return loads of empty beams.

In addition to the three points mentioned the McCarthy trucks frequently haul tire yarn and other products to Cohoes, N. Y., Bridgeport, Conn., Lowell and Whitinsville, Mass., and Nashua and Dover, N. H. In general hauling the trucks often run to New York city. On ordinary trips one driver is used. For distance hauling two are employed.

Dozen Trucks in Service.

The McCarthy fleet comprises 10 five-ton Pierce-Arrows, a two-ton Pierce-Arrow and a two-ton Stewart. All of these trucks are on solid tires. These have answered the purpose to date and as long as they continue to give satisfactory service will not be replaced by pneumatics.

Mr. McCarthy has 64 horses in use but, as previously stated, plans to replace most of these with trucks, only awaiting their disposal at a right price. The horses are used for most short hauls, being mainly employed in carrying cement, brick, lumber and other building materials to jobs for contractors in and about New Bedford.

Tractor Hauls 18-Ton Guns.

Mr. McCarthy has two giant lowgears, one capable of bearing 75 tons and another 60. As many as 24 horses have been hitched to the larger of these vehicles for one haul. For hauling two 18-ton guns to Fort Rodman last summer a Knox tractor was hired for the work. Two of the bigger trucks have also been used to draw these lowgears, with loads nearing capacity.

Mr. McCarthy hauls great quantities of tire yarn from the New Bedford mills at a fixed price, but without contract. The mill officials call him when they want the work done and know he will respond immediately.

A 500,000 Pound Consignment.

Mr. McCarthy has been called to the telephone and has heard a voice at the other end say:



Seven of the Fleet of 12 Five-Ton Trucks Operated by Mortimer McCarthy, Mill Haulage Contractor of New Bedford, Mass., Some of Them Laden with Crated Tire Yarn Beams, That Is Delivered to Weaving Mills.

"We have 500,000 pounds of yarn to be forwarded to the Jenckes Spinning Co. at Pawtucket."

Mr. McCarthy did not faint or even gasp.

"All right. We'll be right over," was his reply.

Of course these 250 tons were not moved in a day but they were moved in a trifle more than a week. A half dozen of the five-ton trucks were put on the job, each getting an early start and making the 80-mile round trip in a day, bringing back empty beams. This means moving about 35 tons a day.

Such calls are considered part of the routine with this New Bedford concern,

which has never dodged a job to date and has no intention of doing so at any future day. Its customers know of this trait and when they have a big hauling proposition have no hesitation in putting McCarthy on the job.

Trucks Defy Blocked Roads.

The McCarthy trucks stood the test of last winter in superb fashion, never losing a day. They tackled apparently insurmountable odds, and, while it took time, they finished every job they started. One memorable trip was in the midst of the winter's biggest snow gale. Four trucks undertook to battle the storm because the Jenckes Spinning Co., at Pawtucket was in absolute need of the

yarn in order to keep running.

This instance is typical of the McCarthy policy, which is to give the customer first consideration no matter what obstacles must be overcome.

The truck caravan left New Bedford Tuesday noon and ploughed through drifts mountain-high, going forward a few feet at a time. Fall River, 13 miles from the starting point, was not reached until Thursday morning, something like 42 hours after the getaway. All of Thursday was required to travel the remaining 27 miles to Pawtucket. The return journey was begun Friday morning and it was Saturday night before the trucks were again housed in the home garage.

TRUCKS USED BY WHISKEY DEALERS TO DELIVER ILLICIT CARGOES

The truck is winning unenviable notoriety in the East as a whiskey runner. Arrests in New York city, Jersey city and Rhode Island are expected to follow the disclosures made by a driver who was arrested in Providence recently with a cargo of 1200 bottles of the bottled in bond article.

The truck pilot frankly admitted to the police and prohibition agents that he knew that he had whiskey aboard. He declared that he got orders from his employer in New York to go to a certain place in Jersey City to take on a load for Providence. This was Wednesday night. He stated that 10 men in that city quickly loaded his truck, told him to proceed to Providence and that he would be met on the outskirts of the city by a convoy.

About 11:45 Thursday night, he said, four men in a Ford automobile met him about eight miles out of the city and told him to follow them. He declared that he followed them to where they told him to stop. A police officer was on the job and appeared at the truck within a few minutes after it had come to a stop.

Work of the Federal prohibition men in Rhode Island, the driver declared, has made New York whiskey runners more careful in their shipment of goods into that state. All drivers bringing contraband goods into Rhode Island are told to take country roads as far as possible, he said, and he further declares that he was told to dodge cities and large towns along the way, and to pass through as few villages as possible.

He is the first of a number of truck drivers arrested to be frank in his statements, prohibition agents declare.

WHEELER-SCHEBLER OFFICES.

The Wheeler-Schebler Carburetor Co., Indianapolis, Ind., has completed a three-story office building, 108 by 115 feet. The first floor is occupied by the engineering staff, experimental room and laboratories and the entire second floor is utilized for general offices. This new administration building is splendidly equipped in every respect.

THE TRUCK ROAD HOG.

Even a writer of truck for a truck magazine is apt to have a friend. The writer has ONE.

Mr. Riter found it out the other day when a fellow asked him to take a spin in his car. Just like that.

No brother, all writers on automobile topics do not spend their spare 23 hours a day lolling in a limousine. Not on your Rolls-Royce.

The subject of this interesting article has about as many joy rides as he has annual baths.

He is 30 years old and he could beat his mother running when he was a kid. Your answer is correct.

There was Him and Me and Her and the other girl in the old boat and—

Dash—dash it all I forgot what I was talking about.

Ah, here it comes back now. Yes. We came up behind a big truck and we—I mean the driver—blew his—I mean, he, the driver—blew the auto horn.

And what do you suppose. No, you would never guess. Yes, yes. It did. The truck (driven by its driver y'understand), turned to the right and got out of the way. Honest!

We looked up the Encyclopedia Britannica, the Police Gazette, the Velocipedia and the whole blankety-blank Pedia family, and their accessories, and found that it was the first time in history.

Honk! Honk!

GENERAL MOTORS IN LONDON.

The General Motors Acceptance Corporation has been granted permission by the State Banking Department to open a branch office in London. The expansion of this department of the General Motors Corporation to England probably is the outgrowth of the association with the corporation recently of prominent English and Canadian interests.

WANTED: 100 INSTRUCTORS FOR TRAINING MOTOR TRANSPORT CORPS

The United States Civil Service Commission has 100 or more vacancies as assistant instructors in the motor transport training schools. Salaries range from \$1800 to \$2400, with \$20 extra a month to appointees whose services prove satisfactory. No general examination will be held. The education, training and experience of the applicant will count for 80 per cent. and a written discussion on one of a series of topics will count 20 per cent.

The Motor Transport Corps training schools will be located at Camp Holabird, Baltimore, Md.; Camp Jesup, Atlanta, Ga.; Camp Normoyle, San Antonio, Tex., and Camp Boyd, El Paso, Tex. Appointments may first be made to the school at Camp Holabird, Baltimore, Md., appointees to be transferred to other camps according to the needs of the service. The duties of appointees will be to assist in the conduct of courses of instruction in automobile repair, construction and operation.

On account of the needs of the service applications will be received until further notice. Papers will be rated promptly and certification made as the needs of the service require.

Applicants should at once apply for form 2118, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the secretary of the United States Civil Service Board, Customhouse, Boston, Mass., New York, N. Y., New Orleans, La., Honolulu, Hawaii; postoffice, Philadelphia, Pa., Atlanta, Ga., Cincinnati, O., Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal., Old Customhouse, St. Louis, Mo.; Administration building, Balboa Heights, Canal Zone; or to the chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

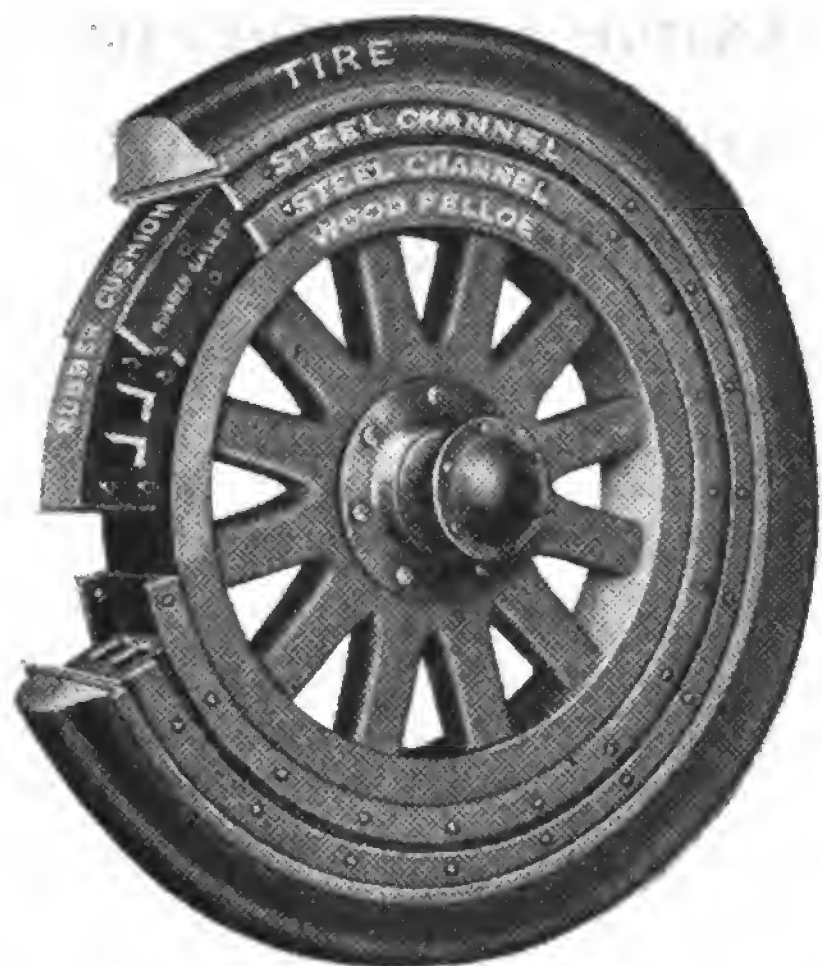
MULLIN CORP. EARNINGS.

The Mullin Body Corporation earned \$134,000 in August, which is at the rate of \$1,600,000 per annum. The slowing up of business in the industry affected this concern but slightly.

New Motor Truck Accessories and Supplies

MORAND CUSHION WHEEL.

The Morand Cushion Wheel Co., 800-902 South May street, Chicago, Ill., is building a heavy duty truck wheel of the cushion type which is claimed to have advantages. The wheel is an artillery type, but differs from the standard wheel in that there is a heavy cushion of rubber between the felloe and the rim to which the regular tire is attached. The felloe band is flanged at each side, and the cushion fits into it,



while at either side are strips of rubber which hold the cushion in place.

The tire band is flanged at one side and on the other is a detachable steel ring. In assembling the side strips of rubber at either side of the cushion fit snugly inside of the flanges of the felloe band and the flange of the tire band, and are bolted to the felloe band and the tire band and loose ring by bolts which pass through bushings inserted in the cushion and rubber strips at the sides. The sizes range from 32 by 3½ inch to 40 by 14 inch and the manufacturers claim that they can fit wheels of any size between these extremes.

SATTLER RECORDER.

Hans Sattler, Sheboygan, Wis., has invented and produces commercially a device which he claims will keep accurate record of the speed, stops and the mile-

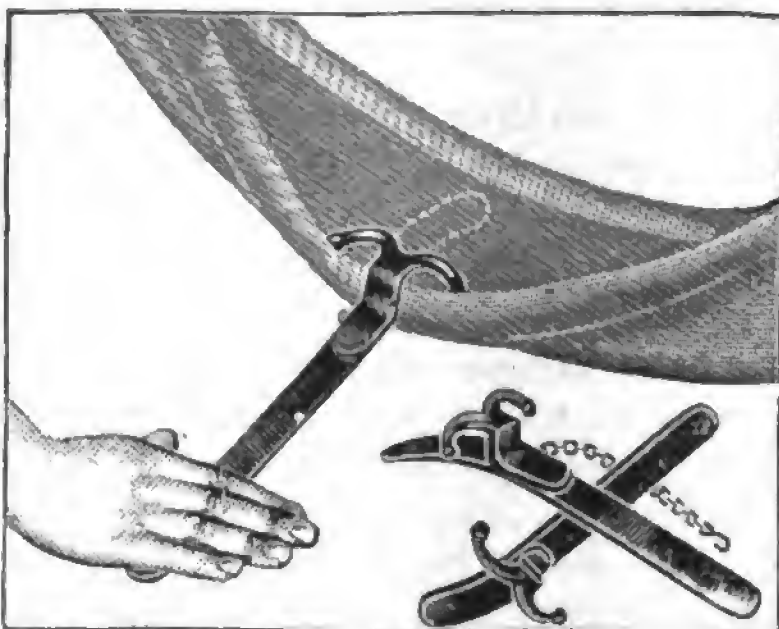


age made during a 24-hour period by any truck. A paper dial is inserted daily, upon which the record is made. A stylus traveling over the face of the dial, driven by clockwork, makes the record, and from this the truck owner can positively determine the use made of his truck during any 24-hour period.

The Sattler recorder is built substantially and it is stated will last for years. It is fully guaranteed for one year against defective material and workmanship and to make accurate record.

COMBINED TIRE SPREADER AND TIRE IRON.

The Lewsen Manufacturing Co., Portland, Me., is making the Lewsen tire spreader and tire iron, which is a tool for the removal and replacement of the clincher tires used on the Ford and Chev-



rolet cars. It is stated that with this tool the driver can quickly remove or replace tires, even though it is "froze" to the rim of the wheel. The tire spreader is particularly useful when inspecting tires, for fabric breaks, tack points, etc., without removing the tire from the wheel.

RIM SPREADER.

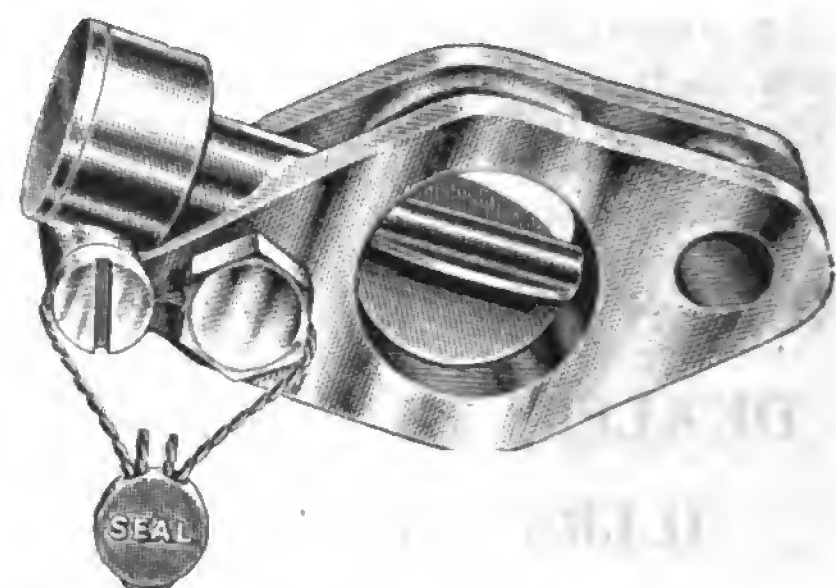
The Lewsen Manufacturing Co., Portland, Me., maker of the Lewsen Quick Rim Spreader, is making a demountable rim tool that is claimed by motorists and truck owners to be a very useful accessory. The tool has two short arms, each provided with a clamp, which slip over the rim, while a third arm fitted with a



clamp for the rim and a turn buckle, the turn buckle being used to contract the rim when removing the tire from the rim.

DELL GOVERNOR.

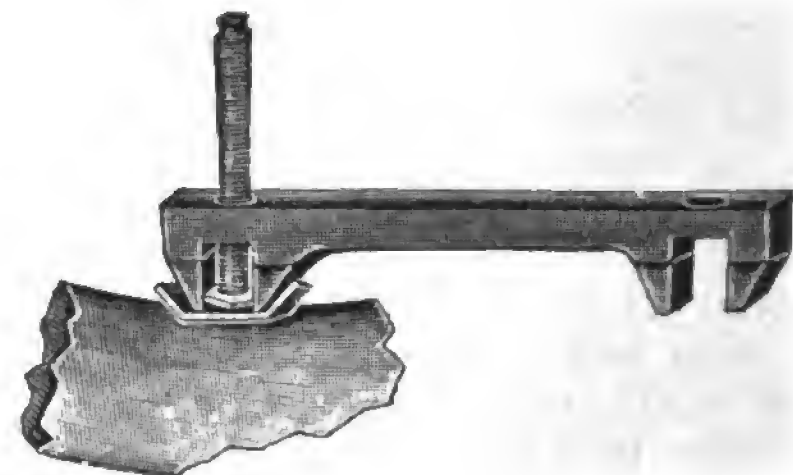
Dell & Co. Majestic building, Detroit, Mich., is manufacturing a governor for trucks and tractors, known by the trade name of "Dell," which is designed especially for engines of Ford trucks. It



may be set at any desired speed, but may be changed by the driver. The device is fitted between the flanges of the intake manifold between the carburetor and the intake manifold, and may be installed by anyone who can use a wrench.

PERFECT VALVE WRENCH.

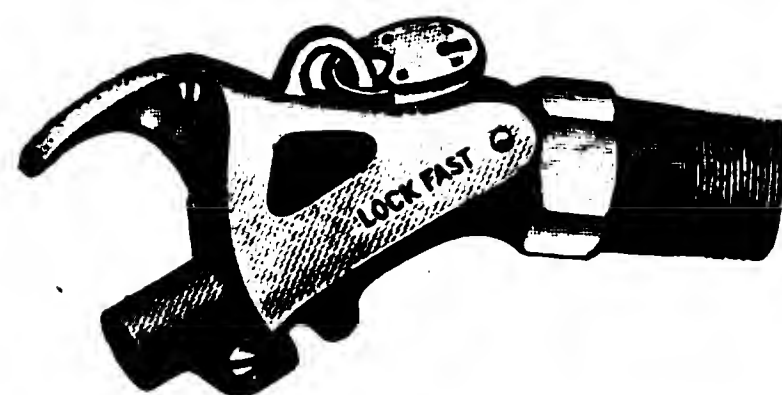
The Lewsen Manufacturing Co., Portland, Me., manufacture a wrench designed to tighten the nuts which fasten valve stems to pneumatic tire tubes. The



two ends of the wrench, each a different size, fit the two sizes of nuts in common use on tire tubes. The wrench is of steel and so made that it will slip over the valve stem, assuring a firm hold for the jaws.

"LOCK FAST" OIL GATE.

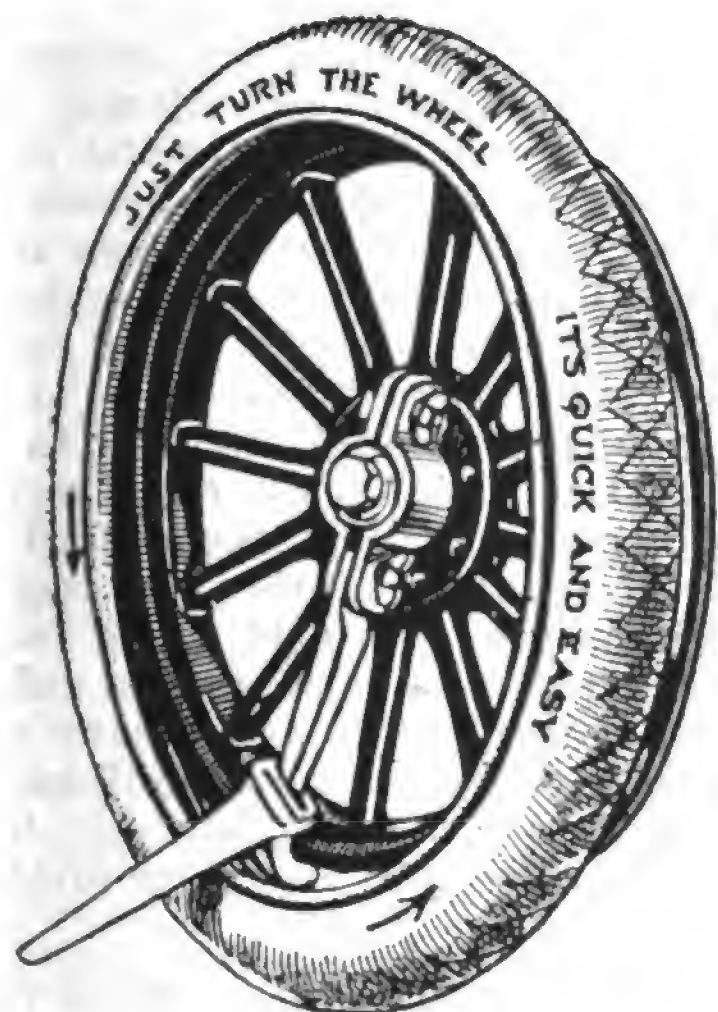
The E. C. Stearns & Co., Syracuse, N. Y., produces the Lock Fast Oil Gate, which is used by garages and service stations storing oil in barrel containers. Heretofore no means of locking the oil



spout has been in universal use. The Lock Fast principle employed allows the station owner to keep such oil containers securely locked when not in use and thus prevent theft of the oil.

CASE TIRE TOOL.

The Handy Manufacturing Co., Cincinnati, O., makes the Case tire tool for clincher tires, which is very useful for removing tires that have been "frozen" on the rims. The tool is made in two sections and is operated by fitting it



over the hub of the wheel. A hooked end slips under the bead of the tire and is turned around the circumference of the wheel by a handle, so that the removal of the tire is a matter of minutes instead of hours.

BASELINE TOWLINE.

The Broderick & Bascom Rope Co., St. Louis, Mo., manufactures the Baseline Towline. This accessory has been developed after many years experimenting and is claimed to be the best in the market.

The device when folded occupies but

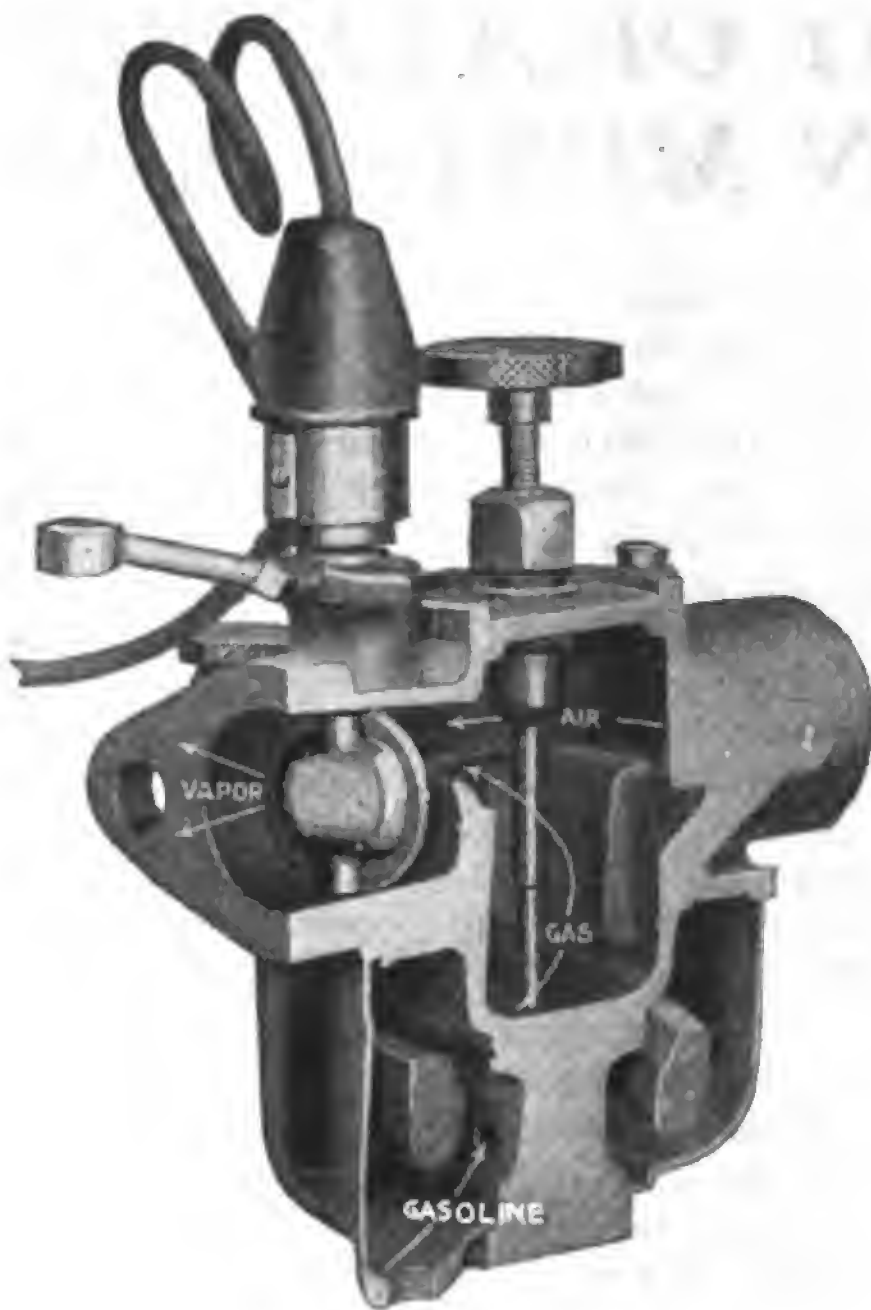


little space in the car or truck and is equipped with patented hook fasteners at each end of the rope for fastening around the axle. The Autowline is strongly made of the highest grade of steel wire and is guaranteed to haul any passenger car or truck under adverse conditions.

ELECTRICALLY HEATED THROTTLE VALVE.

The Instant Starter Co., Inc., Kokomo, Ind., is producing a device known as the electrically heated throttle, which is claimed to be very effective starting trucks in cold weather. The device is

easily connected to a storage battery, a terminal connection being provided



which attaches to the top of the carburetor and contains the heating unit. As the gas rushes past the valve it is heated to such a degree that when it enters the combustion chamber it burns rapidly, the manufacturer claims, driving the engine without irregular action, such as may be expected when a carburetor is equipped with a regular type valve.

HARWARD ONE-PIECE PISTON RINGS.

The Harward Manufacturing Co., 3939 Magnolia avenue, St. Louis, Mo., manu-



factures a one-piece piston ring sold under the trade name of Harward, that is claimed to have many advantages. It is a single ring having patented features which the manufacturer states obviates many of the causes of faulty action in gasoline engines. Pockets in the face of the ring retain oil and insure positive lubrication for the cylinder walls. The joint between the ends of the ring is interlocking and underlapped across the entire surface of the joint, preventing gas and oil from leaking past. The ring is concentric in form and fits the wall of the cylinder with a uniform pressure at all points.

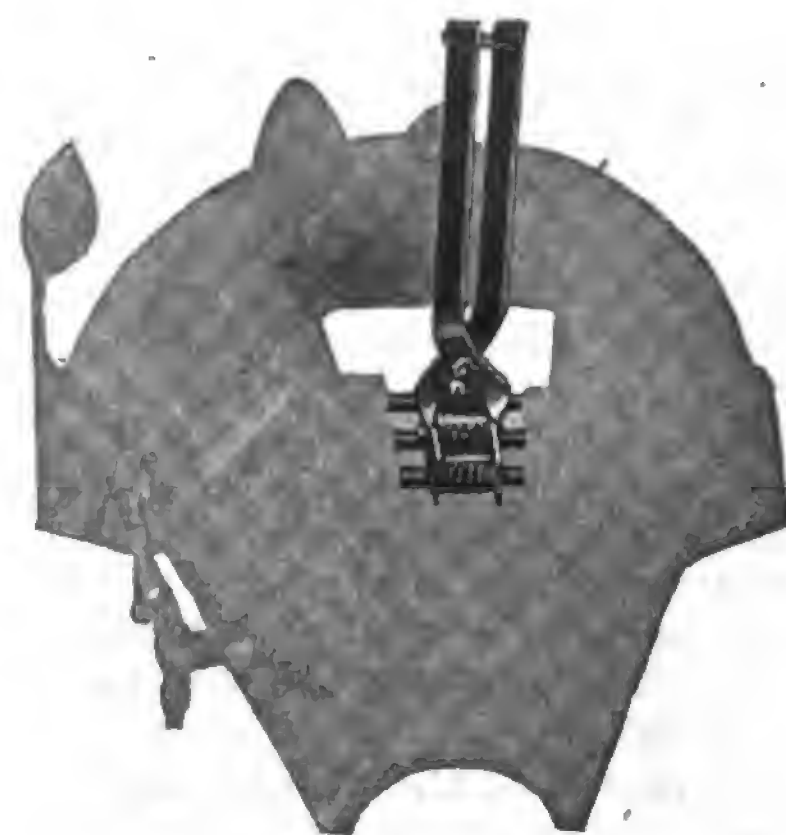
FORD TRANSMISSION BAND SPRING COMPRESSOR.

The Harry Knight Co., 805 Southwestern Life building, Dallas, Texas, manufactures the Roberge Ford transmission band spring compressor, designed for

compressing Ford transmission springs. The compressor is equipped with ends



similar to a four-tined fork, which fit around the bolts and nuts of the bands, while with two long handles the forks are drawn together, compressing the



springs, so the removal is very simple. The handles are clasped in the hand when compressing the spring and later are fastened by a ring fitting over the ends.

TRACTION CHAINS.

The Challoner Co., Oshkosh, Wis., manufactures equipment for motor trucks which includes special clamps for different types of wheels, special clamps for round, oblong and steel spokes, and a special hook to hold cross chains to



clamps so that they may work freely on the faces of tires.

Attachments are made with which chains may be fitted to practically any truck wheel made. The clamps and cross chains may be easily attached or removed in a few minutes time by anyone handy with tools and when not in use these require but little space in a tool box.

REHABILITATING THE RAILROADS IS GREATEST OF ALL WORKS THAT NATION MUST UNDERTAKE

"REHABILITATING the Railroads" is the title of an unusually clear presentation of fundamental facts by E. J. McCarthy, traffic manager of the Tractor Bearings Division of the Hyatt Roller Bearing Co., which argues with distinct clarity of thought that the prosperity of the country is dependent upon the character of transportation available.

He is not a railroad man and his argument is made from the viewpoint of the representative of an industry who understands the need of the best practical means for distributing commodities and products to distributors and consumers. Some excerpts from this statement are well worth reflecting upon. Among these are the following:

Four years ago big business talked "efficiency," then it was "Democracy and Preparedness," and now it is "Production," "Greater Production," when, as a matter of fact, it should be "Railroads."

Transportation and not production is the need of this day and hour. I know farm implement manufacturers located in the middle west who have not increased their production and yet these same manufacturers are accumulating, on their shipping platform, finished products that are ready for the world markets. Yes, and in many instances they are using public warehouses because the railroads cannot furnish them with the necessary equipment. * * *

Increased production means a greater volume of business offered to the railroads, not only in freight, but in passengers of all kinds, with still more salesmen on the job, and with the railroads not in a position to handle the business now offered them it is hard to realize just what the result may be. * * *

"Railway Age" tells us that orders should be placed immediately for 782,400 freight cars to be delivered over a three-year period, and that 262,000 of these are needed immediately to make up present shortage. We are also told that 8000 passenger cars a year are needed for the next three years. * * * Increased production means that we must reach out for more markets, this means new mileage for our railroads. During the year of 1919 the new mileage construction dropped lower than for the past 50 years. Total mileage actually decreased in 1919.

A point generally overlooked is the fact that the railroads are engaged in a wholesale business and when the public buys from a railroad it buys at wholesale prices. The public does not hesitate to pay a producer's profit, a manufacturer's profit, a jobber's profit and retailer's profit on almost anything that it buys; yet, when it buys service from a railroad it is only paying one profit, and the small buyer gets the same price as the large one.

But railroad transportation is only a

service and service is seldom appreciated. The average person when laying out money wants to receive something tangible in return for it, something they can feel, hear, see, taste or perhaps smell! The railroad passenger fare is a very unpopular institution. While freight rates do not directly affect the individual pocketbook, the public has been taught that high cost of living is the direct and dire result of the increase in freight rates. This fallacy is most conclusively disposed of in the following editorial which appeared in a recent number of one of our shipper's journals:

"In 1914 the average commodity value per ton of freight originated on American railroads was \$56, whereas in 1919 it had increased to \$119, an increase in cost to consumer of \$63. Freight charges per ton originated in 1914 average \$2, whereas in 1919 it was \$2.80, an increase in freight charges per ton of but 80 cents. The percentage of freight charges to the value of commodities in 1914 was 3.6 per cent.; in 1919 2.4 per cent. The relation of freight increase to cost increase is found to be 1.3; in other words, only 80 cents out of \$63, or 1.3 cents out of every \$1 of increase in commodity value in 1919 was caused by increased freight charges."

Whether we have a high cost of living or a low cost of living, railroad rates seem to be the palatable and acceptable explanation. It is the most simple alibi that can be offered by the retailer.

The public should be educated to the fact that railroading is an emergency business, and that the cost of maintaining an emergency business is always high. They should be shown that railroading is a hazardous occupation, and for that reason there are increased expenses of operation and maintenance. Probably in no other industry is there any such thorough, comprehensive and extensive system of inspection as we find in railroading. It is true that the public has been informed to a certain extent in regard to these matters, but it has never been thoroughly educated. * * *

What I want to drive home is this fact:

The public has lost sight of this huge expense of maintenance and the railroads have overlooked the opportunity of educating the public in its details.

Such an educational campaign is the more necessary than ever before, because railroads are now confronted, not only with maintenance expense, but what is far worse, the expense of deferred maintenance. There is nothing more expensive than deferred maintenance in railroading. The same is true in any industrial line, or even in farming. * * *

Mr. Samuel O. Dunn, recognized as the greatest living authority on railway

transportation, recently made a rough computation regarding the division of the gross earnings of the railroads of the United States in 1919 and found that in each month of 30 days the railroads were operated 16 days to earn enough to pay the monthly wages of the employees; 5 1/3 days to earn money to pay for materials and supplies; four days to earn money to pay for fuel; one day to earn their taxes; only 3 1/3 days earnings went to net operating income, and that only the earnings of the last one-third of the last day were paid out in salaries to all the division and general officers. Yet in spite of these facts many of us believe that hundreds of millions and even billions, are being paid out in fat salaries to the officers and in dividends to idle rich. * * *

And here again are some more facts: "Railway Age," who is in a position to know, tells us that to put the roads in reputable condition will require the expenditure for equipment of \$6,010,000,000 during the next three years. At the present rate of income and outgo these same railroads are running up an annual deficit of between four and five hundred millions without paying out one penny for expansion.

History tells us we had a panic back in 1875, due to excessive railroad construction without sufficient freight to support it. The railroads and banks went broke as a result. The same result can and will arise from the reverse cause—production comparatively excessive as contrasted with railroad expansion.

We are hard headed, tight fist business men—just as all business men like to imagine themselves between 8 in the morning and 5 at night. We will have to be scared into giving up our dollar.

All right. Here's my valediction.

"Your product may sell for \$25 a piece when delivered to the consumer, but with no railroad to carry it to market—what is it worth?"

That after all is the whole question!

Your shipping platform may be filled with a million dollars worth of goods but—without means of transporting it to your customers it is worth about as much as a Russian ruble. Theoretically it may represent millions. Practically it is a dead loss. The value of any product vanishes without the means of transporting it. * * *

Money that will be spent as a result of higher rates should be looked upon as an investment rather than a disbursement. It would be an investment that would pay an immediate dividend—not to the stockholders and railroad officials, but to the big American public—a dividend in the form of improved service, elastic arteries of transportation and a more speedy restoration of normal conditions with lower prices as a result. * * *

What Kind of Transportation

FIGURES that in total are staggering, and facts that are as bewildering as they are surprising, are included in the excerpts from a presentation of conditions by E. J. McCarthy, entitled "Rehabilitation of Railroads," which appear on the preceding page, and to which the attention of every reader is directed.

The main object of Mr. McCarthy's statement is to emphasize the necessity of restoring the railroads to what may be regarded as their standard of efficiency as of 1914 at the beginning of the world war, so that there shall be transportation equal to what was then available.

It is not an argument by a railroad man, nor is it by one who has a desire to profit by enhanced values from physical improvement or dividends, but it is the conclusion of a keen student of business who has from necessity learned the causes of retardation of transportation and has summarized them so that they can be comprehended by those who are uninformed.

One must understand that there had been no increase of railroad mileage since 1914, that maintenance has been neglected and the rolling stock has deteriorated, that repair shops are operated with obsolete equipment, that facilities that make for economies of time and labor are lacking.

To restore these railroads to what may be regarded as a standard of operating efficiency will require the expenditure of more than \$6,000,000,000. That is, an investment of new capital to that total is necessary, and this must be provided by the people and the reconstruction of the railroads must be accomplished before they can be made productive financially.

This also means that the charges for transportation must be increased so that the railroads shall earn sufficient revenue to pay dividends. There is no prospect that the present earnings, that is, the earnings with the recently increased rates, will be adequate.

The statement is made that the charges for movement of freight are small as compared with those obtaining in the leading foreign nations. This is meant to be an argument that transportation rates can be consistently increased and must be increased that business shall be better served.

There can be no question that the dependence of the nation for long distance movement of tonnage must be upon the railroads. This condition cannot be changed, so that, considering business needs as paramount, the first endeavor should be to facilitate transportation and then to develop and perfect the general plan of operating with the object of meeting the needs of the future.

The nation, the states and municipalities and the people as a whole are vitally concerned in

highway development. Enormous amounts of money have been expended for road building. The public has furnished funds willingly and expects to continue to do so. Not to make appropriations would mean the loss of what has already been expended.

The railroads, relieved of the tonnage that can be economically hauled by trucks on highways, can be made more productive because the long hauls are the most profitable with the least increase of equipment and minimum investment of new capital.

Power truck transportation is intensely practical. It can be adapted to any need and it is wonderfully elastic. Any service can be afforded. Within reasonable distances it is faster and it may be a door to door transfer, obviating costly packing, damage, labor and other items of expense. The average daily mileage of a loaded freight car is, in favorable conditions, from 23 to 30 miles. The power truck can make from two to three times this average in approximately a working day, and it can obviate from two to four handlings and the terminal hauls in addition.

What is necessary in highway transportation is operating plans, system and organization, so that there shall be no duplication of service, so that loads shall be carried practically all the mileage driven, and the general plan should be equally applicable in all parts of the nation.

The railroads and the highway transportation concerns can cooperate for the purpose of serving the people. There should be depreciation of competition with the object of obtaining cheap service. The rates should be sufficient to afford a just return upon investments. There should be regulation, by the states or the nation, and there should be every essential that shall facilitate quick and satisfactory movement of tonnage.

The highways are open to the use of the people, and if the highways exist they should be made use of for the benefit of those who contribute to their construction and maintenance. The need of the nation is primarily business. The transportation of commodities and products by highway is imperatively necessary, and there is equal need of both railroad and road vehicle movement.

The development of highway haulage will mean an era of prosperity such as this country has never known, but it cannot be brought about so long as the belief obtains that the railroads will suffer with its increase. There are wonderful possibilities for the nation, for the people, for the truck industry in the next few years, not through sacrificing railroads for trucks, but through cooperation and unification, and the realization of economies so obviously practical.

Garage and Service Station Machinery Tools and Equipment

GARAGE EQUIPMENT CARRIER.

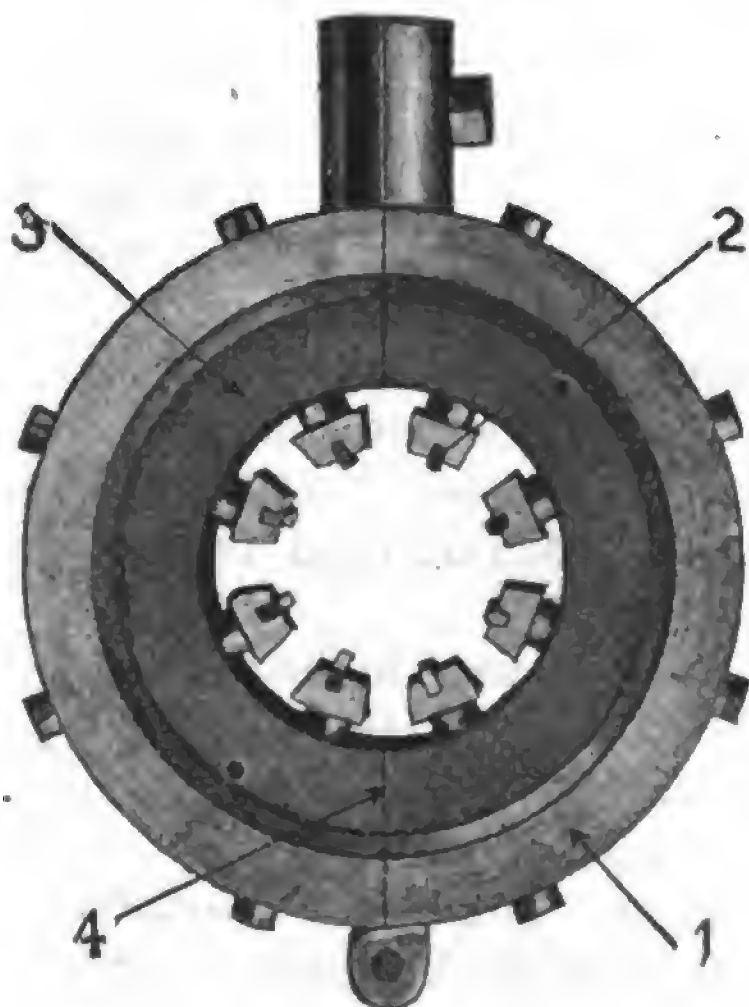
The Loudon Machinery Co., Fairfield, Ia., for many years a manufacturer of barn fittings, is building an overhead track and carrier that is adapted for use in service stations and garages where an overhead track and hoist is an economy for moving such parts from chassis as



engines, gearsets and bodies, etc., about. The carrying capacity of this carrier is 500 pounds, although in actual practise much heavier loads may be carried. The track is constructed of high grade carbon steel, is made in sections and can be easily erected by any mechanic.

PETER'S CRANKSHAFT GRINDER.

The Aluminum Brazing Solder Co., 1303 Widener building, Philadelphia, Pa., makes the Peter's crankshaft grinder. It is usually necessary to do work on crankshaft pins after the shaft has been

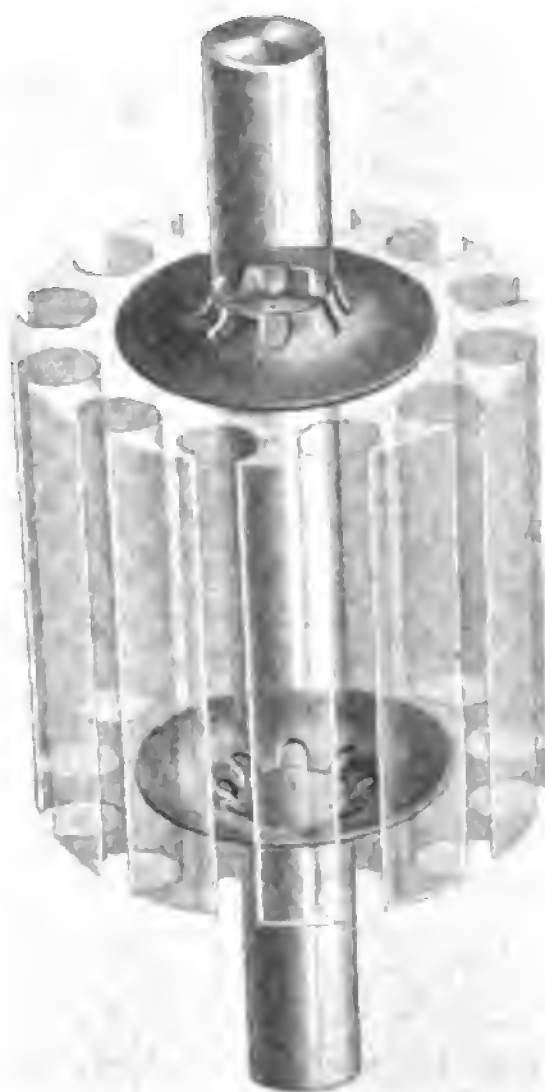


removed from an engine. With the Peter's grinder such work can now be done with the crankshaft in place in the engine in much less time and the finished work is claimed to be fully as good as that done in a lathe.

HOLD TITE LAMINATION LOCK.

The Nutlock Corporation, 166 Montague street, Brooklyn, N. Y., makes a new type fastening for bolts and armature laminations which is patented. It consists of a cupped and toothed metal disc that is slipped over a grooved spindle, which takes the toothed edges of the metal disc.

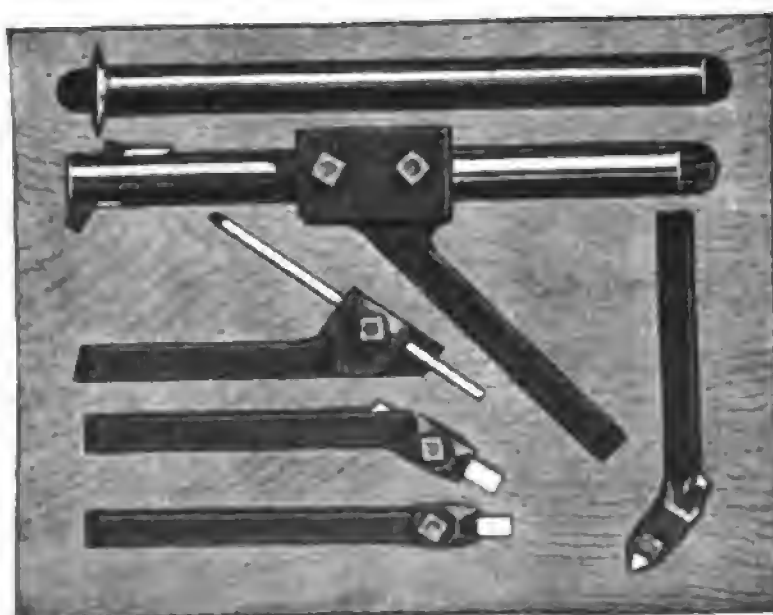
The serated inner edges of the Hold



Tite nut lock have a tendency to cross the treads on the bolt, some of them striking the point of the thread and others striking the root above and below this point, and each projection is partially crimped by the pressure in flattening, thereby wedging the nut lock into position.

RED-E-STYLE "G" SET.

The Ready Tool Co., Bridgeport, Conn., manufactures a series of special tools designed for an average garage and small machine shop where only one or possibly two lathes are in use, and includes a complete set of tools for all lathe work. The outfit consists of straight and left



hand off-set turning tool with an off-set cut-off and threading tool for outside work, while the boring bar and holder, with internal threading bar, used in the

same holder, are for all inside turning. The tools are fastened to a board, which is very handy for the mechanic, as they are always ready for instant use.

POLISHING AND BUFFING LATHE NO. 17.

The Columbia Manufacturing Co., Belleville, Ill., manufactures a series of buffing and grinding machines, among which is listed the No. 17 combined machine as the best adapted for service station work.

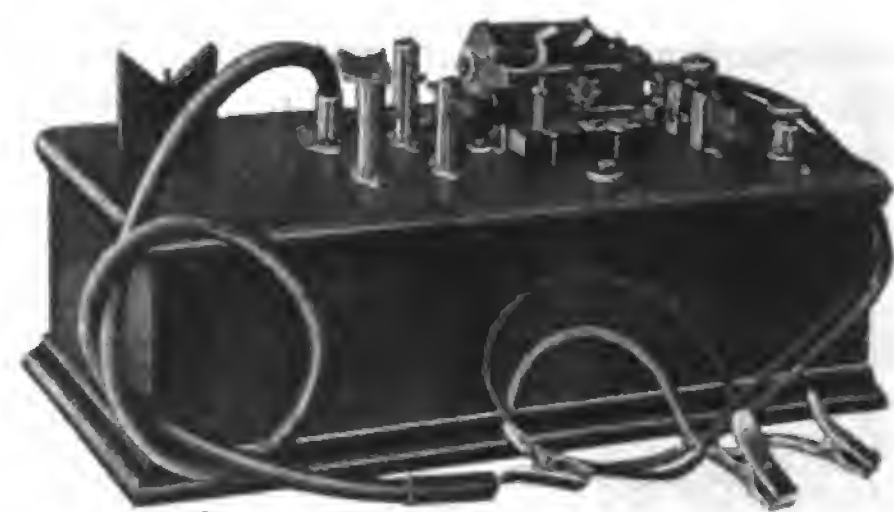
Besides the average garage work



which can be handled with this machine, rasping and buffing tires when fitting new treads can also be done advantageously, as the long spindle on one side of the machine allows plenty of room for turning the tire. A suitable stand is provided for the spindle which has been found to be satisfactory for the average repairer.

IGNI-TEST UNIT.

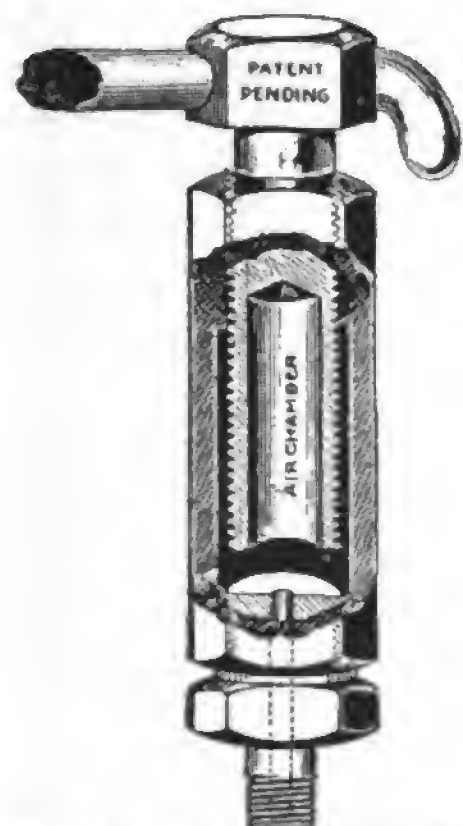
The Testall Electric Manufacturing Co., San Antonio, Tex., manufactures an



electric testing outfit for garages and service stations for which substantial time and labor economy is claimed. The device is self-contained and includes all instruments for making tests or ignition equipment. Either a storage battery or dry cells can be used as a source of current supply. Full instructions and diagrams for making tests and locating defects accompany each unit.

HIGH PRESSURE OIL AND GREASE GUN.

T. H. Strickler, 4231 Wilcox street, Chicago, Ill., recently invented and is now manufacturing a new type oil and



grease gun, for which claim is made that a pressure of 900 pounds can be exerted, so that old grease that may be forced from bearings or spindles and the bear-



ings supplied with clean grease very quickly. Special adapters are provided which fit different size grease fillers.

STEAM CURING BAG.

The Steam Bag Corporation, 1545-47 Broadway, Denver, Col., has been incorporated with a capital of \$150,000 by Denver men. Offices have been opened at the above address and a factory started at 1222 Elati street. The officers are: E. W. Ohls, president and treasurer; C. F. Miller, vice president and general manager; W. L. Heinig, secretary; T. E. Stephenson, assistant secretary; M. A.

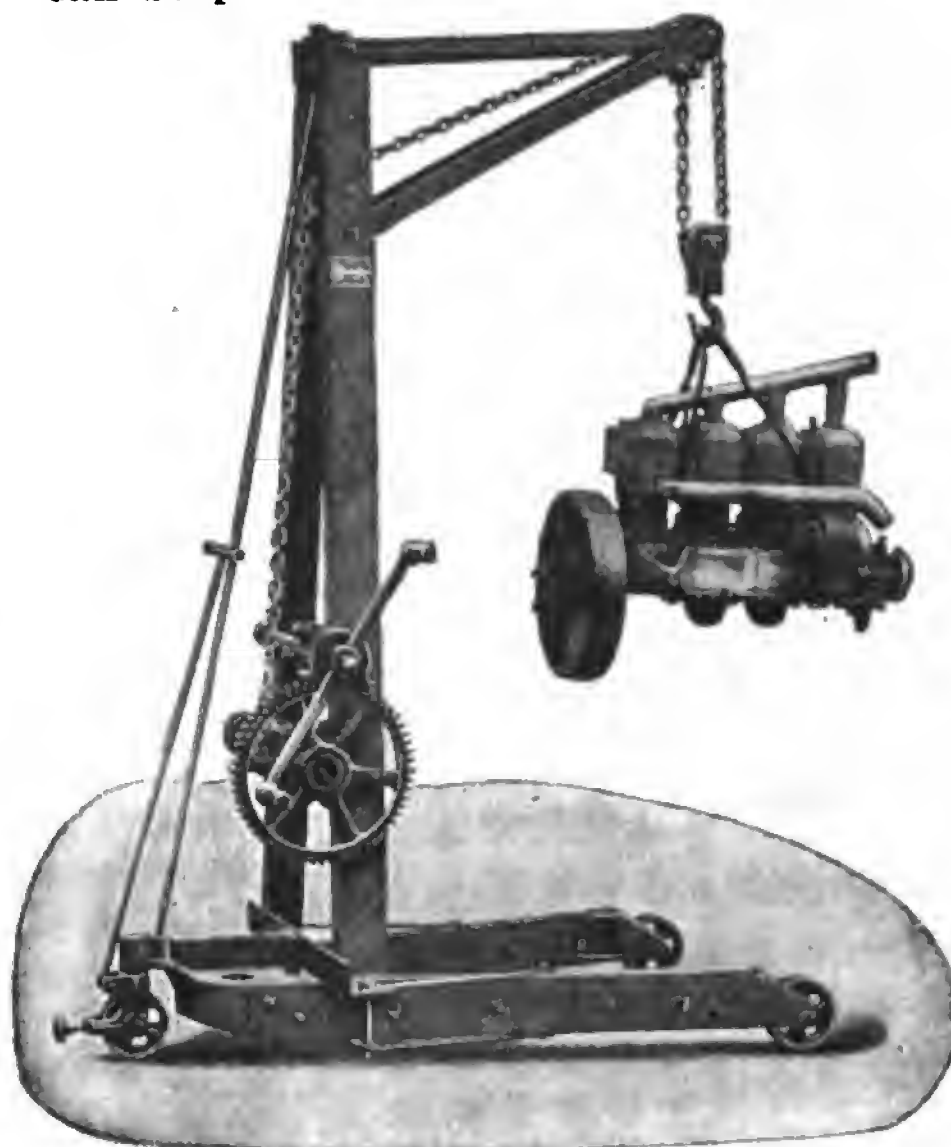


Johnson, service and factory manager. The Steam Curing Bag is a vulcanizer for rubber tires. This method of curing has been used, the manufacturer states, for three years by some of the largest tire manufacturers and has proved high-

ly successful. Recently the company has perfected a steam curing bag for the larger sizes of pneumatic truck tires, including six, seven and eight-inch tires. Patents have been granted the company for the United States, Canada, Great Britain, France and Germany.

PORTABLE FLOOR CRANE.

The Manley Manufacturing Co., York, Pa., manufactures floor cranes for service stations and garages which can be satisfactorily used where overhead trolleys cannot be used. The portable floor crane can be pushed out of the way when not



in use and occupies but little space.

The cranes are constructed heavily throughout, have winches and chains for lifting heavy truck engines from chassis frames and with three heavy roller casters the crane and the weight it supports can be moved wherever desired.

NEW ELECTRIC TRUCK HEADLIGHT.

The Indiana Lamp Co., Connersville, Ind., is producing a new electric truck headlight, a heavy duty type, in which is

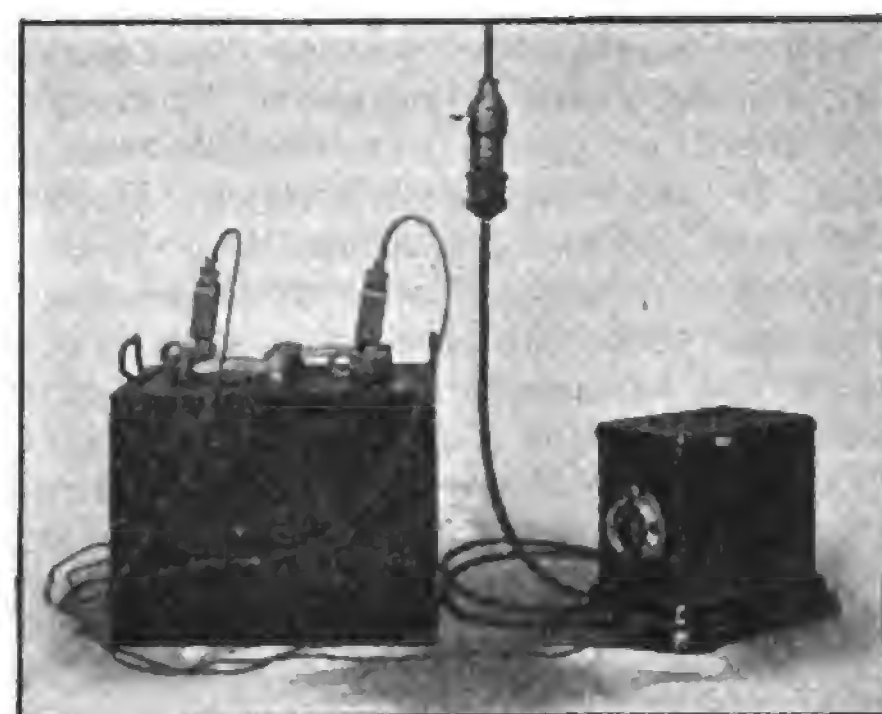


combined features developed from suggestions made by prominent truck engineers.

The glass and reflector of the light are held in by a heavy ring which is securely bolted through the face of the door and fastened by a lockwasher and two nuts, so that the glass will never become loose and the lamp is dust and water proof. The door of the lamp is hinged at the top, so that if it should be left open it will swing shut. Other qualities are incorporated which especially recommend this lamp to truck owners.

ELECTRIC TROUBLE TESTER.

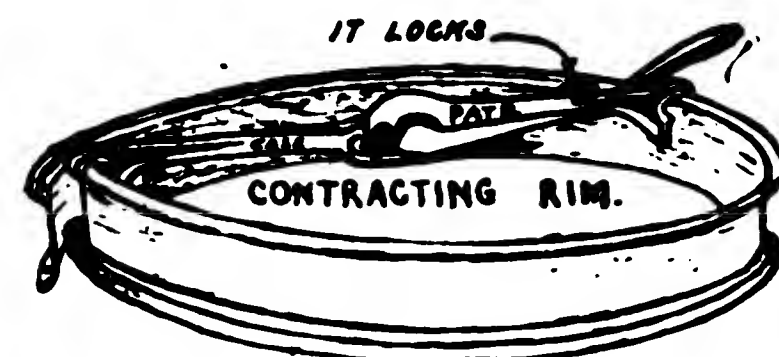
The Service Station Supply Co., 30 East Larned street, Detroit, Mich., produces the Hydrate electric trouble tester that is stated to be a very superior utility for testing generators, starting mo-



tors, light and horn circuits, switches, battery and ignition apparatus of passenger cars and trucks for short circuits, grounds, etc. The instrument combines five instruments in one and is so designed that a series of simple tests are easily made. No special electrical training is required to operate.

DEMOUNTABLE RIM TOOL.

The Lundy Manufacturing Co., Cincinnati, O., manufactures the Case rim tool for demountable rims, which is claimed to have been found to have unusual utility by owners of passenger cars and



light truck, on which this type of rim is generally used.

The tool consists of two arms, with hooked ends, which fit over the edge of the rim, and a third lever that is used as a handle when opening or closing the rim.

The tool folds easily and occupies but little space in the tool box or under the car seat.

NOTES OF THE TRACTOR INDUSTRY

J. I. CASE PLOW WORKS CO. GETS NEW FIELD MEN.

The J. I. Case Plow Works Co., Racine, Wis., has recently made valuable acquisitions to its sales staff. L. W. Grant, formerly with the International at Mankato, Minn., will work in the same territory for the Case. J. A. Petrick, formerly with the La Crosse Plow Works, takes central western Minnesota. Norman O'Connell, formerly with the Bull Tractor Co., takes northwestern Minnesota with headquarters at Crookston. J. E. McCullough, formerly with the Helgesen Auto Co., Oshabrock, N. D., will work in North Dakota.

AGRICULTURAL FILMS FREE.

The United States Department of Agriculture has motion picture films covering 112 agricultural subjects. There are 460 reels, or more than 460,000 feet of film, available for distribution. During the past 12 months more than 700,000 persons saw one or more of these films. Through these films county agents can show the farmer in 15 minutes what it would take him days to demonstrate. These may be borrowed without charge except for the cost of transportation. Department circular 114 explains how this may be done.

\$2,500,000 CORPORATION.

The New Idea Spreader Co., Coldwater, O., has been formed into a corporation after existing as a partnership for 20 years. The capital stock is \$2,500,000, of which \$2,000,000 common has been paid in. The \$500,000 preferred is being sold. Officers have been elected as follows: President and sales manager, Benjamin C. Oppenheim; vice president and factory manager, Harry Synck; secretary, Theodore Oppenheim; treasurer, Joseph Oppenheim.

BLAKE WITH ROCK ISLAND.

H. M. Blake, for years Minneapolis manager for the Parlin & Orendorff Plow Co., has been appointed manager of the Northern Rock Island Plow Co., Minneapolis, succeeding R. H. Proctor, who resigned after eight years in that post to become sales manager for the Actuating Farm Gate Co., Lumber Exchange, Minneapolis.

SWISS TRIALS POSTPONED.

Because of the prevalence of the foot-and-mouth disease the tractor competition to be held at Latigny, near Geneva, Switzerland, has been postponed to an unannounced date.

TRAILER TO USE WITH TRACTOR.

The Stewart Tractor Co., Waupaca, Wis., has designed a trailer for use with tractors.

GENERAL MOTORS TO BUILD TWO NEW FACTORIES AT GRAND RAPIDS

The General Motors Corporation, New York city, which some time ago announced a substantial increase in production schedules for motor trucks, tractors and agricultural machinery, is making ready to build two new factories on a recently bought 60-acre site at Grand Rapids, Mich., one for the manufacture of Sunny Home electric power plants and the other for the making of Frigidaire refrigerators. It is intended ultimately to building 100,000 refrigerators a year, which would mean a gross business of \$40,000,000 a year.

The Sunny Home light system is intended to be less expensive than the Delco light, which is manufactured by a General Motors subsidiary. The sale of the latter is being extensively pushed, there being already 125 distributors outside the United States. They will be introduced in all parts of the world.

AGRICULTURAL BOARD CHANGES.

S. H. McCrory, in charge of the drainage and irrigation division, office of public roads, Department of Agriculture, has been put in charge of the division of rural engineering. E. B. McCormick, who held the latter post, goes to the motor truck division. H. R. Tolley, who has been working on farm equipment in the office of farm management, will do the same work in the rural engineering division.

TO DEAL IN FARM LIGHTING.

The Overland-Bailey Motor Co., 412 South Main street, Ottawa, Kan., has changed its name to the Ottawa-Willys Light Co. and will specialize in electrical farm lighting and will carry a full and extensive line of supplies and materials for that purpose. Bertrand Bailey is president and B. Herren secretary of the company.

ROBINSON IN NEW POST.

The Western Rock Island Plow Co., Omaha, Neb., has appointed Frank R. Robinson manager, succeeding J. H. Hughes, resigned. Mr. Robinson has been assistant manager and formerly traveled for the company, with which he has been connected for 15 years.

HANDLES BIG SAMSON BRANCH.

The Samson Tractor Co., Janesville, Wis., has appointed Walter Husting branch manager in that city. This branch takes in all of Wisconsin except the northwestern corner and also includes upper Michigan and northern Illinois.

FARMERS' WEEK AT CONNECTICUT AGRICULTURAL COLLEGE.

Although only two of the tractors due to take part in the Farmers' Week Tractor Demonstration at the Connecticut Agricultural College, Storrs, Conn., in August, appeared, these attracted considerable attention and carried out the programme as outlined.

The tractors to show up were the Utilitor and the New Britain. They plowed and cultivated, cultivation being in various kinds of crops. They did a particularly nice job in plowing a piece of muck that had been so wet all spring that the college workers were unable to get on it with a wagon. A good sized crowd gave attention every time the tractors got into action.

The reason that more tractors were not present was probably due to the fact that a demonstration was held at the Lexington, Mass., Vegetable Experiment Station the same date and the latter event was arranged for before the Connecticut demonstration.

MONTREAL TRACTOR EXHIBIT.

The Quebec government is cooperating to make the coming plowing match, tractor and farm machinery demonstration at the Macdonald College Farm, Montreal, Oct. 12-14, a success. The demonstration is being held under the auspices of the Eastern Ontario and Western Quebec Ploughmen's association, and practically the same officials who made such a conspicuous success of the Ottawa demonstration last year will be in charge this year. A good programme and list of prizes has been arranged. L. C. McQuat of Macdonald college is secretary. The president is John Hay, M. P. P. of Lachute, Que.

TO MAKE IMPLEMENTS.

The American Acme Agricultural Accessories Co. has been incorporated at Baltimore, Md., with \$50,000,000 capital, to manufacture agricultural implements, metal corn cribs and other specialties. The incorporators are C. J. Ziegler, George R. Sinnickson and William Eisenhart.

MOLINE PLANT IN CANADA.

The Willys-Overland Motor Co. has purchased the 4½-acre site and the buildings of the Roman Stone Co., Weston, Ont., and it is understood that the property will be occupied by the Moline Plow Co. as its Canadian branch. The buildings provide 40,000 square feet of floor space.

ELGIN PLANT SOLD.

Puritan Machine Co., Detroit, has bought the business of the Elgin Tractor Co., Piqua, O., has moved the equipment to Detroit and is now assembling tractors.

TRACTOR OWNER DEVELOPS HEAVY HAULAGE CONTRACTING



Homidas Masse Doing Foundation Excavating with a Cletrac Tractor and a "Scoop," This Manner of Work Being Especially Desirable if the Material Can Be Used for Grading.

HORMIDAS MASSE, 237 Suffolk avenue, Darlington, R. I., bought a Cletrac tractor early in May and is doing contract work at the rate of \$35 a day. He has already paid for the tractor and is making a fine living in this line of business, with the money paid out for the tractor as the sole capital invested.

Mr. Masse is one man who knows how to run a tractor. He has never yet found work he dared not tackle with his Cletrac. He goes in and out of cellars and all manner of excavations with ease. He climbs sand banks, wades through underbrush and revels in mud. As for turning he can whirl the Cletrac around like a top.

Mr. Masse recently cleaned out a cellar, while the building was mounted on posts, the Cletrac going in and out through the bulkhead entrance, with scoop attached. He has mounted the porch at his home and has done so many stunts that it is "circus day" in the neighborhood wherever he puts his tractor at work. His prowess with the machine has attracted such attention that the authorities at the Cumberland monastery, situated about 10 miles from his home, are now negotiating with him to do some work for them, incidentally demonstrating the tractor, they being in the market for one.

Mr. Masse's machine breaks up virgin ground where horses could not penetrate, digs cellars, runs concrete mixers, plows for anybody, pulls up stumps and hauls a road scraper. In addition it does general hauling and tackles jobs which horses and even trucks are unable to negotiate. To date the owner has found plenty of work to do. If the coming winter is as severe as that of 1919-1920 he expects to keep his machine busy, breaking roads and pulling trucks and other vehicles through the drifts.

Drags Steel Girders.

Mr. Masse and his Cletrac played a prominent part in the recent construction of the Broadway garage, Pawtucket. One of his striking performances on this job was the hauling of three steel girders in three trips. These girders were 35 feet long, two feet high and 12 inches thick, weighing 6000 pounds. The hard

part of the task was that they were not on wheels, the girders being dragged along the ground. The going was so tough that in the three hauls a three-quarter-inch steel cable broke six times. Each girder was hauled a distance of about 400 feet.

While on this Broadway garage job a five-ton truck hauling five yards of gravel, weighing 17,500 pounds, got stuck twice. Mr. Masse's suggestion that he could pull the truck out of the mire was laughed at. He put the Cletrac to work and the truck came out in a bound. The second time the truck was stuck Mr. Masse gave an exhibition of just what his tractor could do. He told the driver to shut off his power and the truck, minus power, was hauled out just as readily as on the first occasion.

Where Horses Fail.

At Esmond recently the Cletrac dug an excavation 200 by 350 feet to a depth of 2½ feet. Horses could not work on this job, the going being too soft. A four-horse hitch had tried and failed. In digging a cellar recently the use of a man for the plow was dispensed with except for starting the latter implement, the plow getting a hold to a depth of two feet and sticking on its course.

The Cletrac has proven a wonder in the work of felling trees and pulling up stumps. The other day it leveled six big pine trees in less than 30 minutes. Mr. Masse knows just how to work this oper-

ation, making a rolling hitch about 10 feet up the trunk and then giving the Cletrac the juice.

Pulls Up Big Stumps.

On the Esmond job the tractor pulled up stumps that had defied the pulling power of a steam shovel. The cutting of 200 railroad ties recently was but a short time job for the Cletrac. A task the tractor is soon to undertake and which Mr. Masse regards as more or less of a routine transaction, is the digging of a trench in a pond at Rehoboth, which is to be 2000 feet long, five feet deep and 20 feet wide.

Despite the rugged character of the work undertaken the Cletrac uses but 10 gallons of gasoline in a nine-hour day and less than two quarts of oil. Mr. Masse prefers gasoline for the reason that it is always procurable without inconvenience, while kerosene is hard to get in quantity in some neighborhoods.

The tractor industry would be setting a great pace in the country today if every operator could handle his machine the way Mr. Masse runs his Cletrac.

TRENCHING MACHINERY.

The United States Department of Agriculture recommends trenching machinery in preference to hand labor for farmers contemplating tile laying. The department's investigation shows that a land owner who expects to lay as much as 100 rods of tile drain in soil which would require picking, but which contains no rock, is justified in buying a ditching plow costing as much as \$20. If he proposes to construct 1500 rods of tile drain in soil free from rock and large roots, he can well afford to purchase a horse drawn trenching plow costing from \$300 to \$500, or possibly more. If the owner feels he can sell his machine for \$200 when his ditching is completed, he is justified in purchasing one for digging as little as 1000 rods of drain.

For installing as much as 5000 rods in soil free from rock, stumps and large roots, the investment of \$3000 in a power driven trenching machine probably is justified, assuming that it could be sold later for one-half its original cost.



Towing a Big Tree Trunk Through Low Brush While Clearing Land with a Tractor, a Means of Handling That Saves Much Time and Labor.

NECESSITY FOR HEATING TRUCKS

By C. S. PELTON, General Manager, Perfection Heater & Manufacturing Co.

ASSUMING that heaters for motor truck cabs are soon to become standard equipment, and we heater enthusiasts stoutly maintain that this will be true, the procrastinating driver must now find some new cold weather alibi to replace his ancient but popular excuse that he had "just stopped in to get warm."

In other words, the driver will be warm, as he rides, irrespective of weather conditions.

The truck owner, too, will observe to his utmost satisfaction a gratifying decrease in the gasoline expense of his heater equipped car. No longer will the motor run wild while the driver is toasting his shins in the nearest pool room. His shins will not need toasting and he will have a regular schedule to fulfill, cold weather to the contrary notwithstanding.

In brief, the foregoing are two of many highly important advantages quoted in favor of the modern type of car heater.

The advent of the motor truck into the list of heater equipped conveyances required about the same length of time as that which expired before the adoption of improvements of similar nature in other kinds of vehicles and common carriers.

For example, street cars were operated in the early days without much thought concerning the comfort of the motorman and passengers. All attention was paid to the operating costs of the car—would it be a financial success from the standpoint of the operator? The latter question troubled the street car men much more than the matter of comfort.

Car Makers Had Other Problems.

The same was true to some extent with



C. S. Pelton, General Manager, Perfection Heater & Manufacturing Co.

passenger motor cars. When a few years ago I discussed the heater subject with a prominent manufacturer he laughed and said: "Don't talk heater to me. I've got bigger car problems than that. If the passengers get cold let 'em use the old fashioned soapstone. They got along all right with it when they rode in buggies."

That same manufacturer is today equipping every one of the thousands of cars he turns out annually with heaters. More than 45 other passenger car makers are doing likewise. The heater has come to be an essential accessory on every car where comfort is a pronounced feature.

While truck manufacturers have been developing their product in an engineering and mechanical way, the operators of trucks have been cursing the cold weather driver situation. It has not only been difficult to obtain drivers in the winter months, but those who accepted such employment spent a considerable part of their time in getting warm. And that is not to be wondered at. The unheated motor truck cab in the winter months is just about as cold and undesirable a place as one would care to occupy for a few minutes—not to mention several hours.

Hence the heater solution of the labor difficulty.

Efficiency Is Demonstrated.

Example of motor truck heater efficiency are almost too numerous to mention. One of the largest and best known passenger car manufacturers demonstrated the advantages of this heater equipment to their complete satisfaction during the war, when passenger car production had been cut to the minimum by war conditions, this company began seriously considering truck production. A number of experimental trucks were turned out and some of them carried

heater installations in the driver's cab.

It was not long before the factory officials discovered that the testing drivers all insisted on the heater equipped trucks. Furthermore, the records showed that the testers were running up twice as much speedometer mileage in the winter months with the heated trucks as they did with the non-heated machines. The signing of the armistice terminated their truck building activities, but this company is now the largest single user of Perfection heaters in their passenger cars.

The Northway Motors Corporation had similar experience and now heaters comprise a part of their regular equipment in truck cabs.

The Perfection Heater & Manufacturing Co. of Cleveland is the world's largest manufacturer of motor car heaters. Seven years have been spent in the development of the product and today the factory is pointed out as one of Cleveland's model industrial plants. They recently moved into a large new factory, which is equipped throughout with the latest and best specialized equipment for quantity production. More than 100,000 Perfection motor car heaters are in actual use today.

Many Types for Many Cars.

There are six different types of Perfection motor car heaters—various styles and designs to fit the various makes of cars. Two types especially suitable for motor trucks are known as the "DW" and "DWS." The design is identical except in length.

The heating principle is the same for all types—simply the utilization of exhaust gases that otherwise would be wasted.

A valve is attached to the exhaust pipe just forward of the muffler. This valve is operated by a lever convenient-



View of Truck Cab Interior, Showing a Perfection Heater Installed, the Footboard Being Clear for Movement.



Another Installation in a Truck Cab, with Abundant Space for the Driver and Crew for Vehicle Operation.

ly located. When the valve is opened a portion of the hot exhaust gas is deflected through flexible steel tubing to the heater radiator. In the radiator it is distributed through horizontal gas tight tubes and then passed out into the open air underneath the car. The system is without odor is of gas tight construction and has a high heat radiating efficiency. The heat is introduced into the car by direct radiation, exactly as buildings are heated by steam.

One fact that should be thoroughly understood is this—the modern car heater is in no sense of the word a mechanical toy. Its construction requires a considerable amount of engineering and technical skill. On certain types of Perfection heaters there are 103 separate and distinct machining operations many of them as fine as 1/1000 inch. However, the heater itself is easily and quickly installed on either passenger car or truck.

Special Design for Trucks.

The "DW" and "DWS" heater for motor trucks are designed to fit in the angle between the heel board and the floor of the cab. Its installation is as follows:

First, a convenient location ahead of the muffler must be selected so that the flexible tubing leading to the heater may be attached in as nearly a direct line as possible and so that the valve control can be readily attached. Then cut a "V" shaped hole in the exhaust pipe for the heater valve.

Whenever possible the valve should be placed on top of the exhaust so there will be no danger of picking up any excessive quantities of half burned oil, etc.

Care should also be taken that no attempt is made to fit the valve on a curved or dented exhaust pipe, as any considerable leakage at this point might seriously affect the efficiency of the heater. The valves are machined accurately as to size and should fit perfectly without the use of gaskets.

The valve is provided with stops indicating the limit of both the open and closed position and it is highly important that the lever should have a full throw after the valve is fastened to the pipe.

The valve lever is secured to the shaft by a set screw and can be moved in any position to give a direct throw from the control rod. This lever may be put on either the right or left side of the valve in order to conform with the most convenient installation.

The valve control rod can be and should be accurately adjusted in length by means of the "special connector" furnished, so that the valve lever has a full throw in each direction.

Heat Two Minutes After Starting.

When the installation has been completed heat is available two minutes after the starting of the car.

Obviously the best evidence concerning the practicability and efficiency of the heater is the testimony of those who

have adopted it. That testimony is available on every side.

One of our oldest large users of Perfection heaters is the Yellow Cab Co. of Chicago. It has carried out exhaustive tests proving conclusively that Perfection heaters not only assure riding comfort, but they actually result in the car giving greater mileage per gallon of gasoline in the winter time because of re-

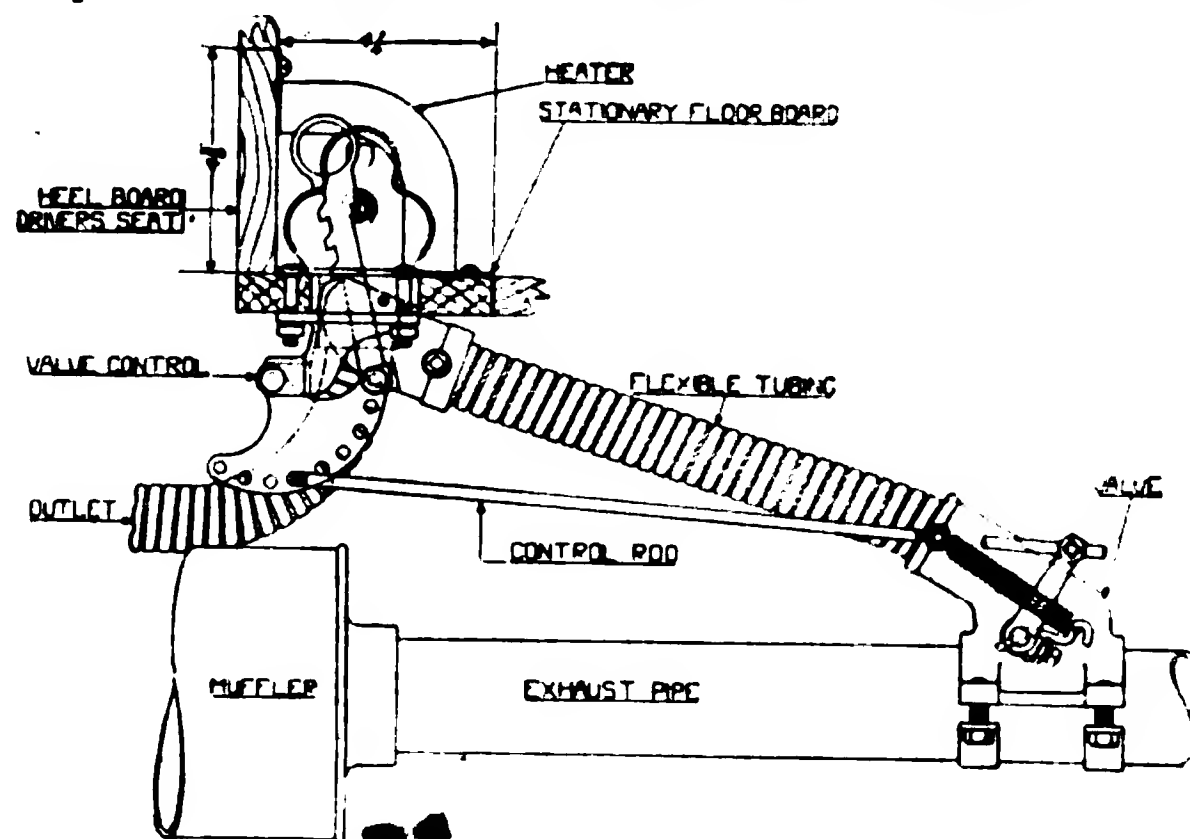


Diagram Showing the Manner of Installing a Truck Type Perfection Heater and Its Connections and Control.

duction of the back pressure in the muffler.

This advantage in itself more than covers the cost of installation. Expense for heater upkeep is nil, inasmuch as no fuel is used except exhaust gas that would otherwise be wasted.

In short, the car heater furnishes comfort and economy without expense—an exceedingly rare combination. But always available in any power vehicle.

GETTING DRIVE-AWAYS TO DEALERS O. K.

(By CHESTER H. TUCKER.)*

OWING to the difficulty experienced in getting shipments of trucks in cars through by freight many cars and trucks are being driven over the road, and a word regarding their transportation may not be amiss.

The successful delivery of a motor truck driven 800 or 1000 miles over the road, depends a great deal upon the proper preparation of the truck for the journey.

A careful inspection of all working parts is absolutely necessary, giving careful attention to every detail of lubrication, especially where hard grease cups are used. The transmission oil should be of a quality and consistency to adhere to every tooth of every gear. It should be of sufficient viscosity to prevent it from thinning too much as the gears become warm, but not heavy enough to pack and form a raceway in which the gears will travel without properly distributing the oil over every wearing surface.

At the end of 100 miles run the truck should be given another careful inspection to see that no parts have become loosened by jarring—all nuts should be tightened. This will often save serious

damage resulting from the loosening up of some bolt or part.

Another very important feature is that of speed. No amount of care can overcome the damage done by reckless driving. The tendency on the part of some drivers to get started late in the morning or spend time by the way and then try to make up mileage by fast driving, accounts for much of the damage to trucks in transit over the road.

Start early, drive steady and watch carefully are three requisites in successful delivery of trucks over the road.

A very creditable showing was made recently by two of our men under the care of Road Engineer Crosby. They brought three trucks from Akron, O., a distance of 779 miles in 58 hours running time.

The model "K" 1½-ton brought a load of 3500 pounds and showed a mileage of 8¾ miles per gallon of gasoline.

The model "F" one-ton brought 1800 pounds and gave a mileage of 11.13 miles per gallon.

The model "H" ¾-ton brought a load of 900 pounds and gave a mileage of 17.73 miles per gallon.

All arrived in first class shape and

gave no trouble enroute, which speaks well for the trucks and the drivers.

*New England Educational Director for International Harvester Co., New England branch.

ACASONS GO BIG ABROAD.

The Acason Motor Truck Co., Detroit, Mich., is reaping the reward of five years' effort in the export market by a big rush this year in the demand from foreign markets. Acasons have been exported steadily during the period named and the present wholesale call from abroad for these trucks is largely repeat order business from established markets.

The Acason factory has one schedule for India for regular monthly shipments up to 1921. Acason trucks are in use in the following places: England, France, Portugal, Spain, Brazil, Argentine, Cuba, Java, Denmark, Norway, Sweden, Bombay, Madras, Rangoon, Singapore, Trinidad and China.

The third large addition to the factory of the Lavine Gear Co., Milwaukee, Wis., is to be completed this month.

NATIONAL HAULAGE ASSOCIATION BROADENS ITS SCOPE

THE National Team and Motor Truck Owners' association, with headquarters at 92 Fort St. West, Detroit, Mich., is campaigning along lines which seem destined to stabilize the hauling industry. As the membership is being increased, through large gains in New York city, Buffalo, Detroit, Cincinnati, Chicago and other cities, the organization is broadening its scope of work and is engaged in many movements for the betterment of those engaged in highway transportation.

A simplified standard system of costs is being worked out and a survey will be made shortly to determine accurate costs of truck operation in various sections of the United States. It is only through an intelligent knowledge of the cost of operation that the evil of price-cutting can be abolished among cartage men.

Plans are also being made by the various local associations to arrange for snow removal from highways; so that the long distance highway transport trucks may maintain regular service

throughout the coming winter months.

The N. T. & M. T. O. A. is also arranging through the local associations to combat any unfair motor truck legislation which may arise when 40 state legislatures convene during the early part of 1921. As rapidly as possible local cartage associations are being formed in the larger cities of the country. Within a short time, through the formation of state associations, the national association will be divided into state organization units.

Elaborate arrangements are being made by the Detroit Transportation association to entertain members of the N. T. & M. T. O. A. at the annual convention which will be held in Detroit the latter part of June, 1921.

Frank J. Abel, president of the N. T. & M. T. O. A., who is also an official of the Buffalo Trucking association, reports that the Buffalo Trucking association is rapidly increasing its membership. Secretary F. L. Henk will attend the next meeting of the Buffalo association, at which time arrangements will be made

for the organization of a state association in New York.

Secretary Henk, whose office is in Detroit, has just returned from a trip to Cincinnati, where arrangements have been made by the Cincinnati Team & Motor Truck Owners' association to open a permanent office with a full time secretary. The new office will be operated along lines similar to the Detroit and Buffalo associations, with a truck registration board for interchange work among members, thus assuring an equitable distribution of cartage work among all members and promoting greater efficiency in truck operation. George H. Oberklein of the J. C. Buckles Transfer Co., Cincinnati, is president of the Cincinnati association.

Secretary C. T. Price of the Chicago Cartage Exchange, member of the N. T. & M. T. O. A., reports an increase in membership of over 25 per cent. within the past several months. The Chicago local has employed an auditor, who will install cost systems in the offices of its members.

ELECTRICAL EXPOSITION.

The Electrical Exposition of 1920, which will open in the Grand Central Palace, New York City, Oct. 6 and continue for 10 days, will display the exhibits of 141 individual manufacturers. The truck and automobile industry will be particularly interested in the third floor, which will be given over to a series of working exhibits where the employment of electricity in a score of industries will be demonstrated. One will be material handling, with industrial trucks, conveyors and hoists, all in operation. The Material Handling Machinery Manufacturers' Association and the Electric Hoist Manufacturers' Association are co-operating with different makers in this particular exhibit.

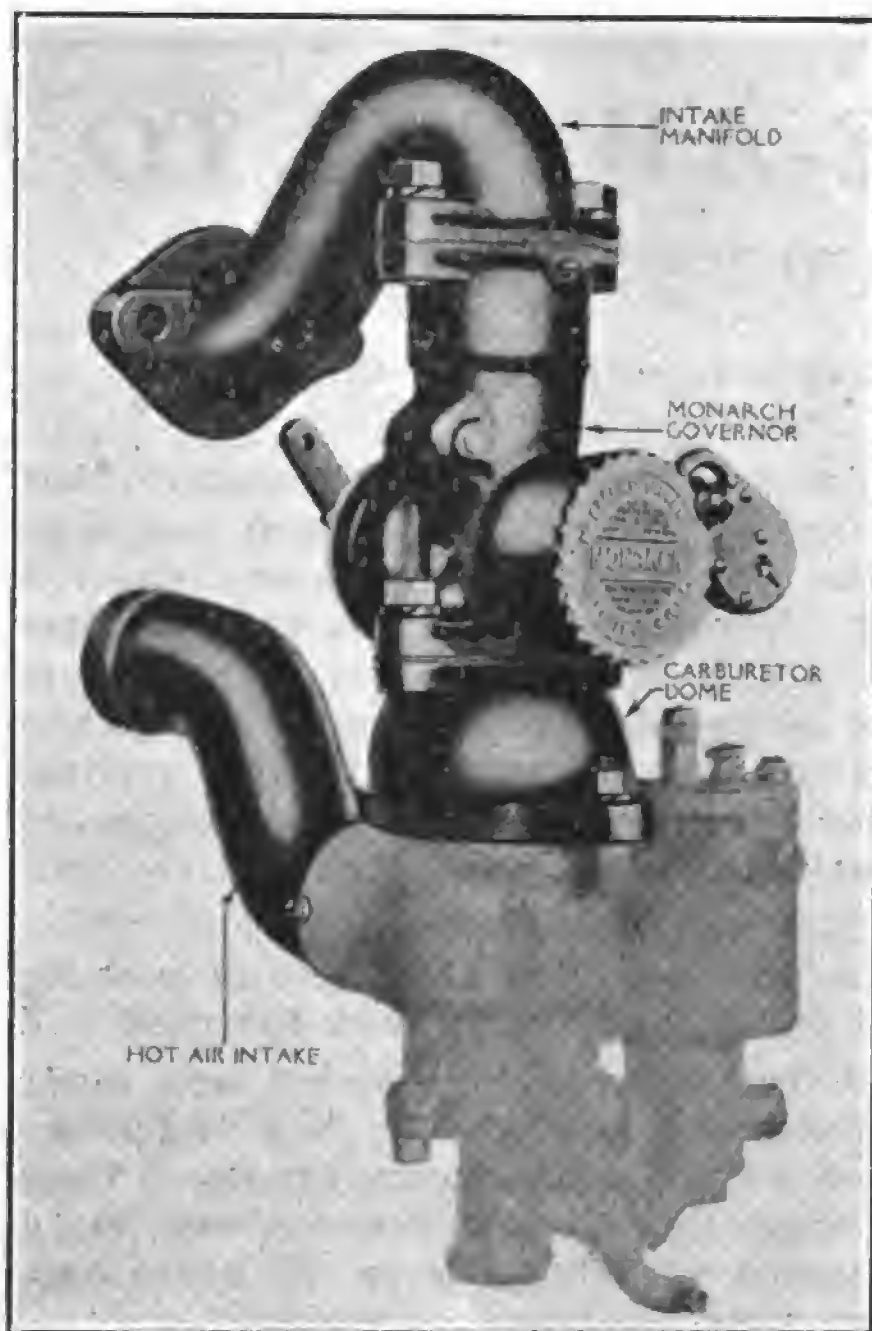
Among the processes of manufacture to be seen in actual operation are wood working, including furniture making, welding, japanning, heat treating, rivet heating, oil tempering and heating with vacuum furnaces. Complete processes will be shown in a bakery, a laundry, a refrigeration plant, battery charging plant, etc. Three types of machine shops will be operated and there will be a special exhibit showing factory lighting, particularly in regard to the factor of safety.

TRUCK NEAR NORTH POLE.

The island of Spitzbergen, which is less than 700 miles from the North Pole, is boasting of its first motor truck, which was recently shipped to that country from Christiana. The truck, a three-ton model, was purchased by the Norwegian Spitzbergen Coal Co. and will be used in the transportation of goods. The body was manufactured in Norway.

NEW MONARCH GOVERNOR FOR DODGE CARS.

A governor that because of its fittings is designed for use on Dodge truck chassis is now produced by the Monarch



The New Monarch Governor Especially Designed for Ford Machines.

Governor Co., Detroit, Mich., and for it very broad claims are made, among these being great flexibility to the varying requirements of the road and load, full engine capacity whenever needed, and the adjustment is made instantly and is automatic.

The governor is characteristic of Monarch products, it being a vacuum type with no shafts, gears, wheels or revolving parts, and it is not driven by the engine or from the truck. It consists essentially of four parts, a special intake manifold, a carburetor dome, a hot air intake and the standard model D governor. Statement is made that the unit can be installed in a few minutes by any mechanic. The new intake manifold is substituted for the original and the governor is bolted to this. The special carburetor dome replaces the standard fitting. When the carburetor is connected to the governor the throttle rod is attached to the lever on the side.

TO PREVENT RUST.

The rusting of shock absorbers and springs may be easily prevented if the car owner will keep on hand a small can of fender enamel with which to touch up bare spots as soon as they make their appearance. Of course it looks better to apply a coat to the whole spring or absorber, but so far as preventing rust is concerned, covering the bare spots as they develop will answer all practical purposes.

RAILROAD CAR SITUATION MENDS.

Decided improvement in the railroad car situation was indicated by figures made public Sept. 8 by the Car Service Commission showing that 946,256 freight cars were loaded during the week ended Aug. 21. This was the heaviest car movement for the year, according to the commission, and closely approached the number of cars loaded for any one week during the war.

SIDELIGHTS ON TRUCK INDUSTRY

IGNORANCE OF OPERATING EXPENSE COSTLY FOR TRUCK OWNERS

In the Promenade street section, not far from the Union depot in Providence, R. I., is located a truck "stand" which has proven a thorn in the side of the legitimate power haulers of the Rhode Island capital. Here trucks may be hired by the week, the day, the hour or the job. These truckmen will transport anything from a toothpick to a dwelling house any distance, from around the corner to the other end of the map.

Where they hit the regular commercial haulers is in the matter of prices. No two of these truckers charge alike, particularly for long hauls. Their prices for small jobs are more or less uniform but there is no hesitation in bidding a little lower than the other fellow. At the same time there are some truckmen who conduct their businesses on well founded principles, charge right prices and stick to them.

It is doubtful if one of these operators keep cost records. If they did they would never think of making long hauls for the price some have been known to make them.

Two typical instances of what these truckers charge on long hauls are here shown.

The other day a truck from this "stand" carried a load from Providence to Malone, N. Y. The run both ways is about 900 miles. The charge was \$275. This trip needed two drivers and surely required a week. Take a week's pay for two drivers, meals and put-ups for the two for a week, gasoline, oil and truck depreciation and the owner of this vehicle owed himself money on the transaction when his truck got back.

One of these trucks took a load to Windsor, Vt., recently for \$75. The round trip is about 325 miles. The journey consumed several days and the keep of the driver and the gasoline, oil and wear and tear on the truck must have eaten up the \$75, and still been hungry.

One of the truck owners has been taking heavy loads to Boston daily for \$25. If there is any money in that proposition the writer is ready to be shown.

LESS TRUCK PRODUCTION.

In Detroit 15,468 trucks were manufactured in July, 4475 less than in June. Ford produced 925 trucks against 10,931 in June. None of the factories, save the Commerce Motor Car Co.'s plant, have closed.

ENFORCING MIRROR LAW.

New York state has joined with Massachusetts in a strict enforcement of the law requiring mirror equipment on motor trucks.

AIRPLANE BOOSTS STEWARTS.

An aeroplane piloted by Lieut. Thomas H. Potter is being used to advertise Stewart trucks in New England. A tour of New England is being made, passengers being frequently carried. Following the tour the plane will be used to carry spare parts for Stewart trucks to the various dealers. Lieut. Potter was a member of the Royal Flying Corps during the war and has also the record for the fastest time between New York and Boston, the mark being made last January with the temperature six below zero.

FLAVIN FOUR-WHEEL DRIVE.

The Flavin Manufacturing Co. was recently organized at Denver, Col., and has under construction a four-wheel drive truck, which is stated to have many innovations in design. The number of universal joints has been reduced and the leverage of the steering gear multiplied to such an extent that the driver does not make special exertion to steer the machine. He also has at his command either a two-wheel or a four-wheel steer.

TRUCK AND TRACTOR GREASE GUN.

A heavy duty grease gun is made by J. H. Haney & Co., Hastings, Neb. This gun has a cone shaped nozzle, instead of a curved type, which adapts it for truck and tractor use, as it will inject any transmission greases without removing the nozzle. By taking off the cone nozzle, heavy greases may be injected. The gun has a capacity of one pound of grease or oil and weighs two pounds.

DISTRIBUTING THE RIKER.

E. A. Bardol, for the past eight years New England manager for the F. W. Woolworth Co., has resigned and will give considerable of his future time to Hare's Motors of New England, of which he is treasurer and one of the principal stockholders. In addition to handling the Locomobile, Mercer and Simplex cars this concern also distributes the Riker trucks.

URGES LIGHTED HIGHWAYS.

The Clydesdale Motor Truck Co., Clyde, O., advocates a White Way on every national and state highway. Lighted highways are entirely practicable because of the proximity of streams and rivers to all main routes. They would have a doubled carrying value, the company contends, and would bring power, light and heat to the farmer's front door.

MAJ. RUTH MANAGER.

Maj. Thomas W. Ruth has been made manager of the retail sales department of the Larson-Oldsmobile truck division, Philadelphia.

NEW YORK CITY TO BATTLE WINTER STORMS WITH MOTOR EQUIPMENT

New York City is not going to be caught unprepared when the snow king assaults that municipality the coming winter. The street cleaning department is being motorized as quickly as possible. Already 212 five-ton trucks, 100 two-ton trucks, 300 push ploughs and one snow removal machine have been ordered while a split among city officials has delayed the installation of 150 tractors.

The Holt and J. T. tractors were the lowest bidders, the latter being the lower. Some officials thought the Holt tractor more suitable for this particular job and favored rejecting the lower bid on a technicality. The resultant differences of opinion caused both bids to be rejected. What action will be taken now is problematical.

The trucks and tractors are expected to replace hundreds of laborers. Many of the trucks will be converted into sprinklers by removing the bodies and placing tanks on the chassis. The department has established a school of truck driving.

SAVES \$250 ON ONE HAUL.

The Northwestern Trucking Co., Bloomington, Ill., is proud of a 2½-ton Bethlehem truck which recently saved the Malt Made Co. of Chicago \$250 by hauling a 5000-pound bottling table from Bloomington to the Windy City. Freight charges would have been \$500 from St. Louis, where the table was bought. The table was sent over a traction line to Bloomington for \$70 and the truck carried it the rest of the way for \$180.

SCRANTON DENBY DEALERS.

Charles Lee and August S. Robinson of Scranton, Pa., both well known in automotive circles, have formed a partnership under the firm name of the Robinson-Lee Motor Co. and will distribute the Denby truck in northeastern Pennsylvania, in addition to handling several passenger cars. They will occupy handsome new salesrooms.

BROCKWAY BOSTON HOME.

Robert G. Jones, Boston distributor of the Brockway truck, has leased for a long term a two-story automobile building in process of construction at the corner of Winslow road and Commonwealth avenue, Brighton. The building has a broad frontage on the avenue.

ARCADIA IN MERGER.

The Arcadia Trailer Corporation of Delaware has absorbed the Birdsall Engine Co. and the Arcadia Body Corporation of Manhattan.

NEW PROBLEMS FOR ROAD BUILDERS

NEW HIGHWAYS COST NATION

MORE THAN BUILDING

PANAMA CANAL

Thomas H. McDonald, chief of the Bureau of Public Roads Department of Agriculture, states that the government's share in highway construction since the passage of the Federal Good Roads act has been greater than the cost of the Panama Canal. The roads built in this manner aggregate in length nine times the distance from New York to San Francisco.

A Department of Agriculture statement issued Aug. 8 says:

"The participation of the national government in highway improvement marks a departure from a policy which had been followed for nearly a century. Federal cooperation on an approximately fifty-fifty basis has counted more than any other factor in initiating highway construction that is being carried on under adequate supervision and in accord with a programme coordinating local, state and national needs.

"Second only in importance to the size of the present road building programme is the excellence of the roads being built. Sixty per cent. of the total allotment of Federal funds which has been approved to date will be spent for roads of such durable types as bituminous concrete, Portland cement concrete and vitrified brick. These roads when built will increase by 7,600 miles the total of 14,400 miles of roads of this class which existed in the United States before the Federal aid road law was passed. But these figures by no means represent the total mileage affected.

"In 1915 the total expenditure for roads and bridges by all the state and local governments was \$267,000,000, while this year the estimated funds available for main road construction are nearly three times that amount, or \$633,000,000. In fall, Federal funds to the amount of \$266,750,000 have been apportioned among 48 states without a suggestion of favoritism, so adequate are the provisions for a just apportionment.

"Up to June 30, 1920, 2985 projects, involving a total of 29,319 miles of road, had been approved by the secretary of agriculture. The preliminary estimates of the cost of these projects is approximately \$384,900,000, of which approximately \$163,841,000 will be approved as Federal aid. On the same date 2116 projects, representing approximately 15,944 miles, had either been completed or were under construction. The estimated total cost of these projects in various stages of construction and completed is \$200,000,000."

The manufacturing sales and the engineering sales departments of the Wellman-Seaver-Morgan Co., Akron, O., have been consolidated and placed in charge of H. P. Glidden as sales manager and E. R. Kenner, assistant.

CAMPAIGN TO CLEAR SNOW OFF DRIVE-AWAY ROUTES.

The Highway Committee of the National Automobile Chamber of Commerce, Inc., Pyke Johnson, secretary, has asked motor car and truck manufacturers to designate the principal route for snow removal in Highway Bulletin No. 122, which reads as follows:

1. As a first step in the campaign for snow removal during the coming winter season, officials of the Bureau of Public Roads have asked the Highways Committee of the National Automobile Chamber of Commerce to obtain data from its members listing those highways which will carry the heaviest drive-away traffic.

2. All members therefore who are interested in this work are requested to send a list of such routes to the Highway Committee, together with approximate figures, if possible, of the amount of such traffic.

3. A bulletin will then be prepared by the Bureau of Public Roads urging concentration of effort on these highways and also calling attention to the need for doing as much of this work as may be possible with the funds at hand.

4. Such data should be prepared immediately as government printing facilities are such at the present time that there is likely to be rather a long interval between receipt of this information and its distribution to the state and other highway authorities.

ACME PHOTOGRAPH CONTEST.

Because of the unusual interest manifested in its recent photograph contest the Acme Motor Truck Co., Cadillac, Mich., announces a new contest with larger prizes, the closing date to be Nov. 15. The best pictures are to adorn the front covers of "Angles," the Acme Co.'s house organ.

Photographs should portray action and atmosphere and a brief story of what the picture illustrates should accompany each. Operating data would be appreciated. They should be 8 by 10 inches in size with view taken perpendicular. The first prize is \$25, the second \$15, the third \$10 and there are fourth, fifth and sixth prizes of a bound volume of 1918 "Angles." The pictures should be addressed to Photo Contest Editor, Acme Motor Truck Co., Cadillac, Mich.

48,648 MASSACHUSETTS TRUCKS.

Up to Sept. 1 there had been registered in Massachusetts 48,648 trucks and 231,637 passenger cars. The receipts from these licenses total \$3,556,405, all of which, except the expenses for registration, go into road maintenance. The increase in truck registration has been 22 per cent over last year.

CONGRESS MAY INVESTIGATE

HOW FEDERAL ROAD AID

FUNDS ARE SPENT

Congress must soon make additional appropriations for Federal aid roads to avoid a serious setback to the progress of road construction. Highway departments should know at least a year in advance what funds are to be available in order to plan future construction.

There are rumors that before Congress votes any more money for this purpose a full investigation will be made of the work already accomplished with the funds provided. Stories of waste and graft have reached Washington in connection with the expenditure of some of the road building funds in certain southern states. While it is presumed that these reports originated in the minds of disappointed contractors, as alleged, it would be well for Congress to clarify the situation at its earliest opportunity.

On July 1 last the final apportionment of available funds was made. This comprised a total of \$100,000,000 allotted to the states in proportion to their population, area and mileage of post roads and with the further proviso that the respective state appropriate equivalent amounts for road construction. If the states continue to pay more than 50 per cent. of the cost as they have in the past the cost of roads constructed with this last appropriation may reach \$250,000,000. Chief McDonald of the bureau of roads states it will be necessary to plan for construction at the rate of at least \$100,000,000 and probably more.

Under the law each of the states must enter into formal agreement with the secretary of agriculture for the construction upon which this money is to be used before July 1, 1922.

FOREIGN TRADE OPPORTUNITIES.

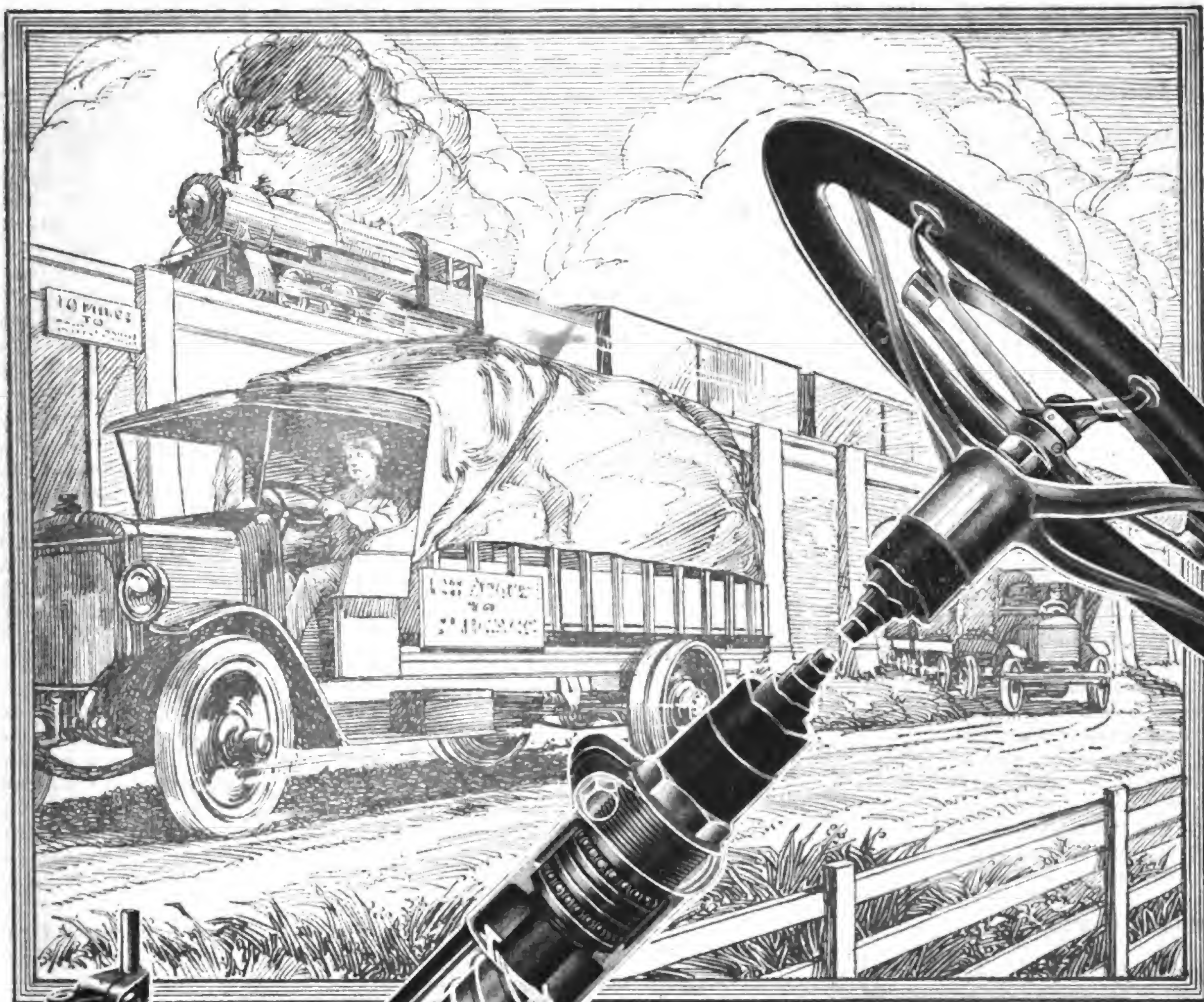
A firm of mechanical and electrical engineers in India desires to receive quotations from manufacturers on a large number of motors and generating sets. (No. 33,421.)

A commercial agent in Cuba wishes to secure an agency for the sale of trucks, automobiles, tires, lubricating oils, etc. (No. 33,423.)

A commercial agency firm in Honduras is anxious to secure the representation of manufacturers and exporters for the sale of automobiles and motor trucks, 1½ ton and up, suitable for hilly country. (No. 33,447.)

M. A. M. A. FOR TOWNSEND BILL.

The Motor and Accessory Manufacturers' association, in convention at Cleveland, O., Sept. 16-17, adopted resolutions indorsing the Townsend bill for a national system of highways and pledging the support of each and every member of the association.



Better Transportation -The Nation's Vital Need

With rail facilities taxed to the breaking point, our biggest problem today is to relieve this strain and help transportation keep pace with industry and agriculture. Unquestionably the solution is the motor truck. Its worth has already been established, and the necessity for its use on a larger scale is becoming more and more apparent every day.

Ross Steering Gears have played an important part in making the motor truck a more efficient and reliable means of transportation. The easy steering, safety and reliability, which are guaranteed by the exclusive screw and nut design, have made Ross Steering Gears standard equipment on 418 different motor truck models from 165 different manufacturers.

Write for any further information desired

ROSS GEAR & TOOL COMPANY

790 Heath Street, Lafayette, Ind., U. S. A.



ROSS STEERING GEARS

THE STEERING GEARS THAT PREDOMINATE ON MOTOR TRUCKS

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

GENERAL INDUSTRIAL HAPPENINGS

PACKARD CO. EARNINGS.

Packard Motor Car. Co. and subsidiaries' earnings for fiscal year ended Aug. 31 were \$10,044,952 before federal taxes, according to a report to its directors by Alvan Macauley, president of the company. He described the year as the best in the company's history and disclosed not only a record making volume of business and gross sales of \$62,597,240, but issued a statement showing the company in the following financial position:

"On Aug. 31, 1920, the company had loans from banks amounting to \$5,000,000 and apart from this was entirely free from indebtedness, except for ordinary current purchases. At the same date cash deposits in banks were \$3,342,865, leaving a balance due the banks of \$1,657,134. In addition the company had in banks for collection but not discounted drafts with bills of lading attached amounting to \$936,896. Deducting these items from bank indebtedness the net amount owing by the company, outside of current purchases, would total \$720,237. In addition to the cash in bank and the inventory the company has cash assets of \$10,787,368. Total net assets over and above all liabilities and charges are approximately \$49,223,120 and surplus over and above all liabilities and stock outstanding is \$22,116,522."

PIERCE ARROW REPORT.

The Pierce-Arrow Motor Car Co. factories at Buffalo, N. Y., have been operating at about two-thirds of normal capacity and the work of turning out its new line of trucks is causing production to steadily increase. The company has enough cash on hand to pay off its bank loans and total current assets of about \$18,500,000 and current liabilities of \$4,000,000, leaving net working capital approximately \$14,500,000, or within about \$3,000,000 of present stock market valuation of entire capitalization of 100,000 shares of preferred, now selling at about 88½, and 250,000 shares of common stock at about 35.

Earnings from its truck department has enabled the company to make substantial additions to its plants without obtaining new capital. For the first six months of this year Pierce-Arrow earned net profits, after federal taxes, of \$1,423,035, or \$4.09 a share on the common, after the preferred dividends.

MAKING ANTI-SKID DEVICES.

The Parker-Morse Co., succeeds the Anti-Skid Unit Co., Cincinnati, O. and will manufacture the Anti-Skid devices for motor trucks, also auto wrenches. Plans for increased production have been made on such a large scale that it is anticipated that the company will be able to meet the incessant demand for its product before the first of the year. The officers of this enterprise are: President, L. Morse; secretary, R. Elsing; vice president; sales manager, L. T. Parker.

TRACKLESS TRANSPORTATION CORP. TO SPECIALIZE NEW TYPE BUSSES

The Trackless Transportation Corp., has been organized by men of standing in the automotive industry to foster the use of motor buses throughout the country. The corporation will have its headquarters in New York City and will operate as a sales and engineering company.

This new company will put on the market an especially designed motor bus, which is intended to meet the exacting requirements of a vehicle of this character and will be in no sense a motor truck chassis converted to carry a bus today, but will be a vehicle the result of expert and accurate data acquired through several years' study of the problem.

The Trackless Transportation Corporation is now making contracts for the manufacture of its new bus and will shortly be in position to supply cuts and specifications of its line.

George R. Bidwell, who has been closely affiliated with the automotive industry since its inception, is president; Herbert Y. McMullen, vice president, and Ezra C. Bull, secretary and treasurer. Mr. Bidwell's experience as a manufacturer and merchant dates to 1880 when he was a wholesale and retail bicycle dealer in New York and was afterwards a partner of the Spaulding-Bidwell Company, sporting goods and bicycle merchants. He also was one of the first manufacturers of pneumatic tires in the United States and was one of the owners and founders of the North American Motors Co., of Pottstown, Penn., manufacturer of motor truck and passenger car motors.

Mr. McMullen has devoted several years to the development of motor buses and trackless transportation equipment. He spent some months in London studying the bus conditions there and has been making a special study of vehicles which will be best adapted to passenger transportation under all conditions.

BIG AUGUST SHIPMENTS.

The National Automobile Chamber of Commerce reports a record shipment of cars in August, the total carload shipments of automobiles and trucks being 22,500 and this not including 17 factories reports from which have not been received. These factories shipped 1408 carloads in July. In addition; 32,540 machines were driven overland and 7038 shipped by boat.

An improvement in railroad conditions is noted. In the four weeks ending Aug. 28 a total of 3,853,822 cars were loaded, a record for August. The accumulation of 269,000 cars last April has been reduced on Sept. 4 to 64,060. An unfortunate feature of the present railroad situation is the delay in unloading cars by automobile dealers.

EISEMANN MAGNETO MAN ENDS SUCCESSFUL WESTERN TOUR.

John P. Walters, western traveling representative for the Eisemann Magneto Corp., is back in the East after a 13 months' tour of the middle and western states, during which he visited Ohio, Illinois, Wisconsin, Minnesota, Idaho, Oregon, Washington, California, Nevada, Arizona, New Mexico and Texas. On the coast he made his headquarters at San Francisco and Los Angeles.

Mr. Walters represented the corporation at several automobile shows and trade association meetings while in the west. At the Los Angeles and Santa Rosa auto and truck shows, the Eisemann magneto-generator was demonstrated, also the type G-4 magneto with impulse starter, which attracted much attention and received much commendation.

Commenting on his tour Mr. Walters says: "In the course of my trip west, which includes British Columbia, I established 15 service stations for the company. The trade in general complimented the Eisemann Magneto Corp. for organizing these service stations and for maintaining a corps of traveling representatives who organize and supervise the stations."

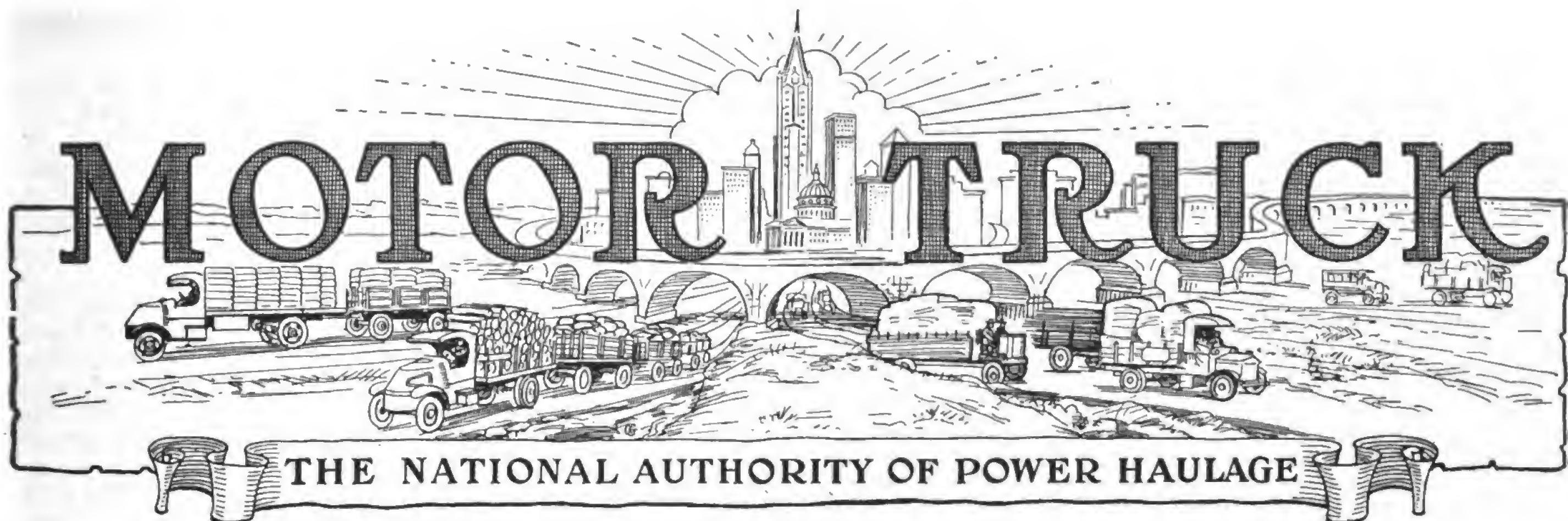
BIGGER GARY PLANT TO BUILD 1-TON PNEUMATIC-TIRED TRUCKS.

The Gary Motor Truck Co., Gary, Ind., reports total sales for the fiscal year ending Aug. 31 of \$2,310,330.68, with net profits of \$219,269.23. A dividend of 10 per cent has been declared, payable quarterly commencing Oct. 1. The company made profits of \$32,186.12 by discounting its bills. The inventory shows a stock of materials on hand valued at \$498,236.16. Plans have been made to enlarge the company's plant in order to provide production space for a one-ton pneumatic tire truck to be turned out in large numbers under the direction of Frank Dawson.

The board of directors was increased in number from five to seven. W. H. O'Donnell retired, and Theodore B. W. Zumstein, Robert L. Scott and J. A. Blodgett were elected to the board. The directors elected as officers Frank Dawson, president and general manager; Theodore B. W. Zumstein, vice president; Robert L. Scott, treasurer, and T. H. Cooper, secretary. Hon. W. F. Hodges, Mayor of Gary, the magic steel city, and Harry Searle remain as directors.

NEW PARKER CATALOGUE.

The Parker Motor Truck Co., Milwaukee, Wis., has its new catalogue ready for distribution and a striking feature of the publication is the absence of all sales talk. It is confined almost exclusively to truck information. Recent changes in models are incorporated.



VOL. XI. NO. 10.

PAWTUCKET, R. I.

OCTOBER, 1920.

TRUCKS MAKE FARMERS' EXCHANGE BIG MARKETING SUCCESS

**RHODE ISLAND ASSOCIATION, NATION'S MOST
PROGRESSIVE COOPERATIVE ORGANIZATION,
DISTRIBUTES SURPLUS CROPS FOR MEMBERS
TO MANY NEW ENGLAND CITIES AND OBTAINS
TOP PRICES BY QUICK DELIVERY TO BUYERS.**

THE Providence Farmers' Exchange and the Providence Market Gardeners' association, cooperative farming organizations, handled more than \$1,000,000 worth of the less than \$9,000,000 worth of produce raised in Rhode Island last year, together with large quantities of fruit and vegetables from farms in Massachusetts, Connecticut and Maine. In 1920 business is ascending on a three-fold basis.

The chief means of getting these crops from the farm to the consumer is motor trucks. The Providence farmers' Exchange operates four trucks of its own. It hires trucks in great number, frequently having as many as a half dozen outside five-ton trucks on the road at one time. The farmer members nearly all have trucks of their own to bring their crops to exchange headquarters in South Water street, Providence.

The biggest thing accomplished by the exchange—and there could be no bigger from the farmers' standpoint—is its disposal of surplus production. The members of the exchange have no worry as

to having their produce rot on their hands. The exchange finds market for every pound and quart of fruit and vegetables raised, shipping the surplus by truck to Boston and other New England cities where an attractive market prevails.

The Providence Farmers' Exchange is

would be like a ship without a rudder. It could not be carried along on anything like its present scale minus power haulage.

First Market Place in 1771.

The Providence Farmers' Exchange is an outgrowth of the Providence Market-Gardeners' association. The latter succeeded the public market place established by the city of Providence in 1771. This market place was built from the proceeds of a lottery which netted the tidy sum of \$120,000. This was in the center of the city.

Gradually as agriculture gave away to industry in the land of Roger Williams the market place was pushed outward and outward. A decade ago the farmers figured that they had reached their limit. Not only were they being literally shoved off the map, but the rental

prices charged appeared exorbitant. Then the Providence Market-Gardeners' association was formed and the farmers established their own market place on Rathbone street.

This was a big boon to the farmer, but the tillers of the soil were forced



Loading One of the Trucks Owned by the Providence, R. I., Farmers' Exchange at the South Water Street Storehouse, for Local Distribution of Products.

one of the few cooperative farming institutions which does an all-year-round business. It did a business of \$280,000 last year and will more than triple that total in 1920.

Manager Edward J. Locke concedes that without motor trucks the exchange

to spend a full day in the city every time they brought a load of produce in order to dispose of their stock. Also there were many times when some of the produce would remain unsold and this must be hauled back to the farm, often going to waste.

Exchange but Two Years Old.

To get rid of these handicaps and to solve the problem of lost time and waste of stock the Providence Farmers' Exchange came into being in April, 1918. In July of this year the concern moved into a four-story brick building on South Water street, at Market square, in the very heart of Providence. This building was purchased by the Farmers' Realty Co., made up of members of the exchange, the new corporation serving as a holding company.

The Providence Farmers' Exchange is to incorporate this fall and may then take over the building. The chief object of the incorporation step is to give the exchange greater power than it enjoys

change retain its customers, they being more anxious to do business with a concern that can always supply their demands.

Two Members in Maine.

Of the nearly 70 members in the exchange 55 are in Rhode Island and nearby Massachusetts points. The others are further away in Massachusetts, in Connecticut and two are in Maine. The latter ship potatoes and other produce to the Providence headquarters, knowing that when it leaves their hands it is the same as sold.

The exchange has four trucks, a $\frac{3}{4}$, a and a 2-ton Republic and a Tonford. The smaller Republic and the Tonford have been in service two years and the others three years. Despite usage seldom given trucks and in spite of a more or less dilapidated appearance the four vehicles are still sturdy and continue to carry their loads.

These trucks have been worked all hours and with all manner of overloads.

approximating 10,000 pounds, or five tons. This same truck also hauled 500 tons of fertilizer last winter outside of business hours. There is never any hesitation in using these trucks at any hour of the day or night, week day or Sunday, to do a pressing job.

Overloads Are Common.

Three tons is an ordinary load for the two-tonner and it has carried as high as $3\frac{1}{2}$, and yes, even four, without emitting an extra groan. The one-ton truck never shies at the two tons and the $\frac{3}{4}$ -ton fellow feels lost without a load close to 3000 pounds.

The exchange officials never know the cost of repairs, but they do know that the trucks come up smiling and looking for work every morning no matter what they hauled the day before. The lack of knowledge as to repair costs is due to the fact that the trucks are stored and repaired under yearly contract. It costs the same whether there are many breaks or few.

Manager Locke pointed out that because of irregular hours it would be hard to figure how many miles are covered on a gallon of gasoline. He figured it would be hardly fair to even talk about mileage per gallon for trucks subjected to the kind of usage those in the service of the exchange undergo.

The question of mileage per day was threshed out, however, and brought surprising figures. Offhand, Manager Locke could not give figures. He brought out the fact that a speedometer recently taken from the Tonford showed 13,000 miles in less than eight months. Allowing 25 working days a month this would mean over 65 miles a day.

Over 80 Miles a Day.

The exchange director had previously been asked if he thought his trucks did 40 miles a day.

"They do over twice that," he replied.

After he had mentioned the performance of the Tonford he was queried as to how the other trucks compared on daily mileage.

"They do much more," he stated.

Have Paid for Themselves.

Even allowing for the extra hours the performance of the three Republic trucks in averaging better than 80 miles a day is well worthy of comment. When their overloads are taken into consideration it may be easily reckoned that these trucks have long since paid for themselves. This may be more readily realized when it is noted that only the other day Manager Locke paid \$637 for three weeks' haulage to one of several trucking concerns which do business with the exchange.

As previously suggested the two greatest benefits farmer members derive from the Providence institution are the saving of time by which the agriculturist is enabled to put every hour of sunlight into the cultivation of his crops and the other big factor, the selling of every ounce he produces, thereby entirely eliminating surplus.

All the produce is brought into the exchange at night. The majority of members use their own trucks for this pur-



Produce Brought to the Exchange by Farmer Members Left in Street for Loading Conveniently—A Typical Accumulation at Midway.

under the present charter. This pertains particularly to buying. At present the institution is enabled only to buy when a market has been secured for the goods. A car load or two of potatoes may be purchased if the buyer is in sight.

It is proposed to secure the right to buy on a large scale when the market is right. If there is an opportunity to contract for 20 car loads or more of produce at the brink of a rising market the exchange would like to have the authority to do so, which is good business.

10 Per Cent. for Handling.

The members of the exchange are members and nothing more. They own no stock. Whether the member has a five-acre farm or a 500-acre estate and whether he markets 500 or 50,000 bushels of produce matters not. He has one vote and no more.

Each member is charged 10 per cent. by the exchange for handling his goods. At the discretion of the manager the produce of a non-member is disposed of at the same rate. This is done when there is a call for certain vegetables which the regular members cannot supply. This action naturally helps the ex-

The worst part of their treatment, however, has been in the matter of drivers. Although well paid for regular work and overtime and being always given every gentlemanly consideration that the nature of the business permits, drivers are almost impossible to keep. This is because of the early hours and long hours.

A service slip taken at random shows a driver was on duty from 6:20 a. m. to 7:30 p. m. with a total of one hour off for two meals. This is fairly typical, although frequently a driver must report considerably earlier than this hour and they often work an hour or so later.

Trucks Work All Hours.

These trucks have also worked many nights. The two-ton Republic has often made a night run to Boston after putting in a dozen hours on delivery service during the day. This same truck has also hauled 5000 barrels of potatoes from Slocum, R. I., to Providence, a distance of 35 miles, in addition to its daily delivery work for 10 to 12 hours.

This particular haulage job was done with a trailer. Sixty barrels were taken on each load. A barrel weighs 165 pounds, each of the 83 loads therefore

pose. A few use horses. In exceptional cases the exchange trucks go and get the goods but only in rare instances are collections made. The farmer brings his stuff in at night, empties his load, gets back to his farm, has a night's sleep and is out in the fields bright and early in the morning.

The Farmer Saves Time.

Up to the starting of the exchange he was up long before daybreak. It was still early when he reached the market place at Providence. He put in his entire day disposing of his load and often returned after a trying day with unsold stock, some already spoiled by exposure to the sun all day and the remainder destined for a similar fate.

Produce is brought to the exchange regularly, although not every day during the season, by members residing at Slocum, R. I., and Westport, Mass., each 35 miles from Providence. Putnam and Woodstock, Conn., are nearly the same distance. At regular but infrequent intervals loads come from as far as Hartford, Conn., a distance of 85 miles. Of course motor trucks are used in all these cases because of the long hauls. Yet horses also carry loads surprising distances to the Providence market.

Almost daily trips are made by farmers from Dighton, Mass., Swansea, Mass., Touisset, Mass., Warren, Warwick and other Rhode Island communities.

The exchange trucks deliver mostly in Providence, although they reach Pawtucket daily. Once a week deliveries are made to Bristol and Manville, R. I., and to Mansfield, Mass. Other intervening centers are also visited at certain periods. Deliveries are to retailers, the exchange operating on a wholesale basis only.

Long Hauls by Hired Trucks.

During the busy season from the middle of April to the end of November hired trucks ply regularly to outside cities. The vegetable receipts are usually too large to be disposed of entirely in Providence and its suburbs. Manager Locke studies the markets at Boston, Springfield, Worcester, New London, Conn., and other points. When the produce of the members can be more favorably disposed of elsewhere Providence is naturally given the go-bye. When there is a surplus the other cities get it and get it quick by truck.

In the cabbage season more hired trucks are in use than at other times. It is a regular thing when the cabbage crop is being marketed for a half dozen five-ton trucks to be running nightly to Boston with the excess crop. Whether going to Boston, Springfield or New London the trucks leave Providence at an hour that will insure their reaching their destinations about 3 a. m. These consignments are to commission houses, brokers or wholesalers as the case may be. The exchange delivers to these distant cities only in bulk.

To help solve the return load problem for others and get a low rate for itself the farmers' exchange has arranged for all empty trucks bound for other cities to report to its offices. Sometimes provisions are made two or three days ahead

by truck owners whose carriers are scheduled for trips to other cities.

From Fields to Buyer.

When a farmer member has a large supply of any article that is a drug on the Providence market trucks are usually sent to his farm and the loading and unloading process in Providence is thus avoided, the truck getting its burden in the fields and taking it direct to the Boston, Springfield or New London buyer.

An element of individual speculation is preserved in the exchange in that members can select the time for marketing their products. It is the manager's business to obtain information about the various markets and inform the members when and where he can sell their products and at what price. But the grower can hold his crops for a more favorable market if he thinks such can be had later.

The grading is very strict, though it is left to the individual farmer. Each grow-

er has a number and this number is on the tags furnished him by the exchange to put on his produce. So any incorrect grading can be traced directly to the man responsible for it and the penalty is exacted from him. This penalty usually takes the form of a reduced return from his sale as in the case of a grower who makes a crate extra fancy when all its contents are not. The buyer is permitted to have the crate at the price for ungraded produce.

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Handles Big Total Daily.

The magnitude of the undertaking in which the exchange is engaged may be realized from the fact that on a busy day as many as 1000 bushels of tomatoes are handled, 100 barrels of potatoes, 100 bushels of onions, 350 boxes of apples, 100 boxes of lettuce, several hundred barrels of cabbage, together with peppers, beets, carrots and other vegetables and fruit in quantity. In the corn season it is routine to handle 2000 dozen a night.

Rhode Island soil is prolific. The Gulf Stream touches it and hurries along the crops, which are often a fortnight ahead



Truck of C. C. Reynolds, Slocum, R. I., Delivering 60 Barrels of Potatoes at the Farmers' Exchange Warehouse in Rathbone Street, Hauled 30 Miles, a Part of a 5000-Barrel Crop Sold by Cooperative Marketing.

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Economy in Hired Trucks.

Manager Locke has decided that keeping a small fleet for what is practically local deliveries and hiring trucks for the longer hauls is the most economical operating plan and he has a strong argument in support of this contention, despite the monstrous hauling bill the exchange pays annually.

His stand that owned trucks would be unprofitable is based on lost time. The trucks now owned more than care for the needs during the period from Dec. 1 to April 15. Oftentimes crops are de-

of those in Boston, which is but 44 miles northward. Rhode Island is the most thickly settled state in the Union and industrial and commercial life has been eating into the agricultural territory so that with few exceptions only the smaller farms are left. These bear an enormous quantity of food stuffs. These farms can be made profitable only by the most modern marketing method. That is what the Providence Farmers' Exchange provides.

One Farmer's Yield.

As an example of the huge yields from Rhode Island market garden farms, E. W. Peck, president of the exchange, marketed last year from his 175-acre farm, not all of which was under cultivation, the following:

Two thousand three hundred and sixty-one bushels of potatoes, 1925½ bushels of tomatoes, 104 bushels of peas, 2368 bushels of onions, 69 bushels of apples, 4436 dozen beets, 694 bushels of cut beets, 1697 crates of lettuce, 2897 dozen

ears of sweet corn, 2727 bushels of escarole, 3088 boxes of rhubarb, 214 pounds of asparagus, 123 barrels of squash, 120 boxes of egg plant, 943 boxes of radishes, 4240 crates of cabbage, 2010 dozen leeks, 1977 bushels of romaine, 42 bushels of Lima beans, 1067 boxes of cucumbers, 4104 bushels of spinach, 648 bushels of parsnips, 592 barrels of savoy, 323 bushels of carrots, 304 pounds of shell beans, 4125 bushels of dandelions, 7942 dozen rarieripes, 133 bushels of sorrel, 938 quarts of berries, 178 bushels of green beans, 114 bushels of peppers, 3208 dozen celery, 742 bushels of kale, 58 boxes of asters, 31 boxes of salvias, 18 boxes of tomato plants and 27 boxes of celery plants.

The Providence Farmers' Exchange started with 10 members, all from the Market Gardeners' association. There were 21 when the movement got under way at full speed. There were 52 early this year and now the number is 70. Each member pays \$2 a year dues and puts up his note at the beginning of each season

site of the market place conducted by the Market-Gardeners' association. Here potatoes and other articles that will keep for any period of time are often stored to await a rising market.

While there is usually a supply of produce to be handled up to Jan. 1, the busy season really ends with November and does not begin again until well along in the following April. Rapidly a business is being built up during these off months. Last winter 3000 tons of fertilizer were disposed of. This year the exchange plans to get rid of 15,000 tons.

Fertilizer, limestone and farm machinery are all purchased for both members and non-members. There is a slight difference in the charge, which about covers the bookkeeping required in doing business for an outsider. Last year the difference for lime was 50 cents a ton.

When a farmer is found who is interested in the purchase of lime it is the business of the exchange to dig up a few more agriculturalists in the same district so that the demands of all will

will pass the extra output along to the retailer at a profit-paying figure.

There are far-sighted members who see even a greater development of the cooperative idea. In their minds-eye they mirage the day of direct selling. By producing, buying and selling cooperatively they figure that there will ultimately be direct distribution to the consumer, which will mean that the big profits taken by the middlemen of today will be divided up between the producer and the consumer, giving the latter his food at a price he can afford to pay and returning to the farmer a living commensurate with the long hours and hard labor that life on the farm entails.

When that day comes the truck will play a bigger and more vital part than it does today in distribution. It will be the biggest instrument in providing direct communication between the man who grows the produce and the man who eats it, and the chief agent in cutting the string which keeps the H. C. L. kite soaring so high.

May it be soon, says the farmer.

May it be soon, echoes the consumer.

OMAHA-DENVER RECORD RUN.

A Reo Speed Wagon recently hung up a record between Omaha, Neb., and Denver, Col., covering the distance of 606 miles in 20 hours and 32 minutes, an average of 29.55 miles an hour. The fast train on the Chicago, Burlington & Quincy railroad takes 16 hours and 10 minutes for the run, which is 68 less miles by rail.

The truck carried 2535 pounds of merchandise from the M. E. Smith Co., Omaha, to the Denver Dry Goods Co. A heavy rain part of the trip made the traveling rough and the glaring headlights from night traffic around Lincoln, Neb., checked fast going for a distance of over 30 miles. An average of 11¼ miles to the gallon of gasoline and 101 miles to the quart of oil was secured.

THE WINNING STANDARD.

The accompanying illustration shows the Standard 2½-ton truck which upheld American manufacturing methods by winning a gold medal at the International Trials at Barcelona, Madrid, Spain, in competition with 28 of the leading makes of motor trucks from England, France, Spain, Italy, Switzerland and Germany. This award was a triumph for American engineering and proves that American made trucks can stand up on European roads as well as on those of this country.

Roberson, Strader & Co., Greenville, N. C., has a fleet of four Acme trucks operating around the plant and lumber trips daily to woodlands 7½ miles away trips daily to woodlands 7½ miles away over roads that are simply trails. The cost of hauling per thousand has been cut from \$4 to \$1.02 through the use of trucks, which the firm now uses exclusively. The first truck bought paid for itself in six months and others are doing likewise.



Standard 2½-Ton Truck That Won the Gold Medal in Competition with 28 Other Makes in the International Trials at Barcelona, Spain.

for \$25 plus \$15 for each acre of land he is to cultivate.

This money was what the exchange formerly did business on, but it is not anticipated that there will be any further need for utilizing this collateral, the institution being well able to travel "on its own." However, there is a likelihood that the notes will be demanded just the same as in this way the organization holds the reins over any member who breaks its rules or figures in any transaction which might draw down a fine. The latter assessment might be made in the event that a member who had agreed to market a certain crop through the exchange, which crop might be already sold in Providence, should divert this produce to other channels.

An All-Year-Around Business.

Steadily and surely the exchange is developing a business that will hold its organization intact for 12 months in each year. It now employs 17 people. In addition to the large building in the center of the city it has a storehouse on the

reach a car load. Then the car is shipped direct from the factory to the handiest point for all concerned. Then the farmers get out their own vehicles, usually motor trucks, and haul their share of the lime to their respective farms.

In buying fertilizer, limestone and farm machinery the exchange has saved members and non-members from 10 to 20 per cent. on their purchases. Power machinery of all kinds was handled last winter and much more will be secured this year. Some of these days a live tractor concern will make the exchange its distributor in this territory and other makers of implements and power machines will do likewise.

The Providence Farmers' Exchange has accomplished what it set out to achieve. Every member can give his entire time to production and let the exchange take care of distribution. No member need worry about having any surplus produce on his hands. He knows that if he doubles his crops the exchange

DUFRESNE BROTHERS, TRUCKMEN



The Five-Ton White Truck Operated by Dufresne Bros., Worcester, Mass., for a Daily Express Service Between That City and Springfield, Mass.

THE greatest brother act in trucking industry is performed by five boys in Worcester, Mass., none of whom was too old to serve his country in the world war.

Three of these boys drive the trio of trucks operated by the brotherhood. A fourth manages the business. The fifth is anxiously awaiting the day when he will be old enough to get a chauffeur's license. This is a matter of months and this boy is up in the mechanics and can pilot a truck as well as any of his elders in the family. When the fourth truck is bought he will be all ready to climb into the driver's seat.

These brothers, Eugene, Frank, Joseph, Henry and Ralph Dufresne, 37 Orient street, have been engaged in contract hauling for 14 months and are traveling along the broad avenue of success. They attend to their business every minute, take good care of their trucks, never go back on their word and do not know what it is to have a dissatisfied customer. They do their own repairing except when the break is of an exceptional nature.

They started in business with two two-ton Commerce trucks, both of which are on pneumatic tires. Following substantial returns from their efforts they purchased a five-ton White four months ago, which has solid tires all around.

The boys are establishing a motor express line between Worcester, Springfield and Holyoke, on which they give daily freight service. Once a week the big White, which makes this run, goes through to Hartford.

The concern has an unusually fine proposition here. The boys have an unwritten contract with a Worcester manufacturer to deliver his product to Springfield and Hartford. This manufacturer supplies a part load both ways. The White has been making the Worcester-Springfield-Holyoke trip daily for a month and has been taking a full load (which, by the way, is seven tons), enough express matter being supplied to fill in the space not required for the products of the manufacturer.

Sure of Part Load Both Ways.

By having a paying load both ways

at the start the youngsters have no cause to worry and cannot possibly lose while experimenting their plan of building a permanent express service between the three Massachusetts cities, with a possibility of taking in Hartford for daily runs later. They make street deliveries in every city they visit.

One of the two-ton Commerce trucks is employed largely in collecting at Worcester and surrounding towns for the Springfield-Holyoke shipments. Later it makes deliveries when the White brings back its load from those cities. The other Commerce truck is mainly engaged in furniture moving, but is ready to be put into the express service whenever business warrants this step, which is likely to be soon. The firm does no piano moving, but takes whatever general hauling the demands on its equipment permits.

The distance from Worcester to Springfield is 50 miles and from Springfield to Holyoke 10 miles. Counting in deliveries in the two cities the five-ton White makes a 125-mile run five days a week. It usually loafs on Sundays. The other day it goes through Springfield and Holyoke to Hartford, the day's drive being about 200 miles.

When Holyoke is the destination the

truck leaves Worcester at 4 a. m., reaching Springfield about 8:30. Deliveries are made here and Holyoke is reached well before noon. The truck is back in the home garage with its return load about 6 p. m.

200-Mile Haul by Five-Tonner.

The Hartford jaunt is considered a 20-hour trip. The start from Worcester is made at midnight and Worcester is reached again about 8 in the evening. Paper from the Holyoke mills frequently forms a sizable part of the return loads from that city.

One of the two-ton Commerce trucks has gone to New York several times and has made trips to Middlebury, Vt., Manchester, N. H., and other distant points. A recent trip to Brooklyn, N. Y., was made in 15 hours and the return journey was in 16 hours. The truck left Worcester at 1:30 p. m., Brooklyn being reached at 4:30 a. m. The machine started from Brooklyn at 9 a. m. and got into Worcester an hour after midnight. Stops were made only for meals and gasoline. Two drivers are used for long hauls. Three men form a truck crew in furniture moving. Insurance is carried only at a customer's request.

The two Commerce trucks show 10 miles to a gallon of gasoline and the White does better than five. The former runs 80 miles on a quart of oil and the latter 50. Both of the Commerce trucks have an extra chassis length of a foot, which, with two-foot tailboards, gives them a length of 13 feet. Both are now equipped with express bodies, having 20-inch sides. The White has a stake body, the stakes being four feet high. This chassis is 14 feet in length.

Five Brothers All Drivers.

All of the five Dufresne brothers can drive. Eugene attends to the business end of the concern and Frank, Joseph and Henry are the regular drivers. Ralph knows a truck from engine to tailboard and is eagerly looking forward to the day when he will be old enough to get a license. He was too young to break into the world war, but Eugene, Frank and Henry did their bit in the



The Three Trucks Owned by Dufresne Bros., One White and Two Commerce Machines, Used for General Haulage at Worcester, Mass.

aviation service and Joseph was in the navy. Frank was assigned to the quartermaster's department in the aviation branch and was on duty as a truck driver much of the time.

The five brothers are all interested in the trucking business and are willing to work long hours to carry out their contracts with patrons.

NEW YORK CITY TRUCKING.

A recent survey of traffic in and out of New York city, in which figures provided by the National Automobile Chamber of Commerce, the New Jersey Interstate Bridge and Tunnel Commission and the Department of Plant and Structures, City of New York, were coordinated and reconciled, show that 154,700 cars and trucks enter and leave Manhattan daily. Of these 139,000 cross bridges and 14,846 travel by ferry.

Trucks carry an average load of 1.14 tons. Trucking is heaviest in the early and middle part of the week, showing a slight falling off on Saturday, to a negligible amount on Sunday. Twenty-three per cent. of trucks counted during three days were traveling without loads, which shows that the return load problem has not been solved and that all trucks are not being economically operated. More truck travel is found in proportion over the ferries than the bridges. During a 24-hour count on 15 ferries the passenger cars totaled 7364 and the motor trucks 7482.

LOGGING ON ROUGH ROADS.

E. C. Portner, Allyn, Washington, knows that no horse drawn vehicle can do and believes that there are few trucks capable of doing the hauling he has recently negotiated with his 3½-ton Selden truck. This truck is used as a tractor in connection with a two-wheel pole trailer. He hauls an average of 3400 feet per trip. His hauls are 2½ miles each way and the truck goes right into the forest, the dirt road being slippery and soft. Recently during a stretch of 13 days, rain or shine, he averaged seven trips a day.

DRIVE ON OVERLOADS.

Representatives of the leading truck and tire companies have been called into conference with the State Motor Vehicle Department in California to war on overloaded trucks. A schedule of weight and speed to be allowed to trucks according to their width of tire will be drawn up and will be incorporated in a bill, providing a strict penalty, which will be presented to the Legislature.

CRANK CASE LUBRICATION.

The Motor Truck committee of the National Automobile Chamber of Commerce has recommended that all truck manufacturers carry a slug in their advertising to the effect that crank case lubrication be renewed every 1000 miles, the crank case drained, the engine rinsed with kerosene and refilled with new oil.

SOUTHERN EUROPE & NORTH AFRICA TRACTOR AND TRUCK MARKETS

Motor trucks which can be operated with the smallest amount of fuel, gasoline and oil being remarkably high abroad, will find a ready market in Egypt, Algiers, Tunis, Morocco, Spain, Portugal, Italy and Greece, according to G. P. Kievenaar, who has just returned from a seven months' trade investigation tour of Northern Africa and Southern Europe and whose findings in full may be seen in Export American Industries, the official international organ of the National Association of Manufacturers. Mr. Kievenaar is vice president of Export American Industries.

The traveler found that there should be a good market for trucks in all the countries visited, American vehicles being equal in quality and price to all competitors. The feature which appeals most to practically every one of the countries visited is economy of operation, because of the high price of fuel.

An interesting feature of the investigation was the disclosure that a number of trailers are in use in these countries and that a strong demand for them is in evidence.

TRUCK A BIG TIME SAVER.

An Acme truck owned by Stanley Orbanes, a farmer near Williamstown, N. J., does in one-third the time what his team and wagon once did, giving him the additional time to put into the preparation, planting, cultivating and harvesting of crops. In this one-ton truck he carts from 80 to 130 baskets of produce from his farm to the Philadelphia market, 22 miles away. He makes the round trip in between four and five hours. Sometimes he makes two trips a day. His produce gets to market fresh and brings top prices. If he does not carry a full load he feels that he saves money on the trip because of the economy of operating his truck. He bought the Acme last October and has never had it in a repair shop.

CO-OPERATIVE OWNERSHIP.

The cooperative idea of motor truck ownership is being boomed strong in Western New York and it is anticipated that several such lines will be in operation next spring, especially in the district where dairying is the leading farm activity. The farm bureau managers of Chautauqua, Cattaraugus, Orleans and Niagara counties, representing about 50,000 farmers, are enthusiastic over the movement. The matter will be taken up at winter meetings when transportation experts will deal with the subject.

8651 RHODE ISLAND TRUCKS.

On Sept. 1 in Rhode Island 8651 trucks had been registered against 7100 for the whole of last year.

TRUCK FALLS 55 FEET UNHARMED.

Testimony to the construction of the Acme truck was given in a recent accident at Charleston, W. Va., when a one-ton Acme owned by Ruffner Bros., wholesale grocer, piled over a 55-foot embankment, landed bottom side up and suffered no material damage, except scratches on the body and twisting the cab and windshield. The driver was unhurt.

The accident happened late in the evening and because of the darkness the truck was left until morning, though it was necessary to shut off the motor, the crash not stopping it. In the morning the truck was righted and upon examination was found to be undamaged with the above noted exceptions.

Although it had stood all night just as it landed, bottom side up, no water, oil or gasoline had leaked out and it was driven away under its own power. Bystanders and witnesses of the accident were positive that the truck was damaged beyond repair, and it seems almost impossible that a truck could take this drop without great damage to its mechanism.

TRUCK SAVES \$5400 YEARLY.

A two-ton Acme truck owned by M. T. Kelsey, Northwood farm, Topeka, Kan., moved a crop of 15,000 bushels of potatoes in 20 days and replaced three teams at an average saving of \$18 a day, or \$5400 a year. This year he has used a trailer, pulling as much as 180 bushels in one haul. In 14 days the Acme hauled 33 car loads of potatoes, averaging 440 bushels to the car, besides hauling a load of manure each day. The record trip from the farm to the cars is six miles of gravel road. The truck has run 5500 miles since it was bought last fall and has the original spark plugs, which have never been cleaned and never get dirty. The only repairs have been new clutch bands.

\$300 TRUCK LICENSE.

One of the first bills which must engage the attention of automotive interests lined up to fight adverse legislation is Senate Bill No. 331 in New Jersey, which provides higher fees for truck owners than any other state. These fees range from \$20 for a one-ton truck to \$300 for a 7½-ton vehicle. The increase in the latter case is about 350 per cent. The license for the 3½-ton jumps from \$35 to \$90 and for the five-ton from \$47 to \$165.

SWEDEN LIKES YANKEE TRUCKS.

The Swedish Glass Works at Reijmyra, in northern Sweden, has just placed its order for its third Duplex Four-Wheel Drive truck. The first was ordered last autumn. The demand for a second quickly followed. Other European countries are joining, with Australia, India, South America and Mexico in the call for Duplex trucks.

TRUCKMAN BLAMES DEALERS FOR LOW HAULAGE RATES

THE Metropolitan Storage Co., 6 Barton place, Worcester, Mass., is a one-price trucking concern, of which there are, alas, too few.

The Metropolitan's price for any of its three trucks, a five-ton White and two two-ton Hurlburts, is \$5 an hour, take it or leave it.

Of course the customer is not told about the price in that crude way. The management is courteous and diplomatic but, when it comes to price, absolutely firm. Five dollars an hour does not mean \$4.50 or even \$4.99. It's \$5, rain or shine.

As a result of this fixed rate long hauls have been infrequent of late. This concern, however, has sense enough to prefer to have its trucks remain idle than to make distance trips at a loss. Local hauls are easier on the trucks as a rule, easier on the men and require less detail work and worry for the executives. The three vehicles are kept pretty busy near home and the absence of long hauls hasn't caused a single gray hair to grow around 6 Barton place.

The Metropolitan Storage Co. has 100,000 square feet of storage space, 65 per cent of which is taken with household furniture and most of the balance with merchandise. The storage and haulage fields work well together. People who store furniture are glad to find a trucker handy to haul it. Those who engage storage space like to be able to close the deal for moving their furniture to the storehouse at the same time. It is in the moving of furniture and pianos that this concern specializes. In this work the company trucks have journeyed to Philadelphia, Pa., Wilmington, Del., New York city and other points, but always at a living price.

Trucking in Huckster Class.

John S. Gerety, who pilots this organization, is a student of transportation and has some pronounced views on the subject. He declares that the day is at hand when the haulage industry must be removed from the huckster class and put on a firm business basis. While charging by the hour he is for a stabilizing of prices fixed on mileage and labor. The commercial haulers must act like business men in other lines and displace their present cut-throat methods with a unity of interests before such a result can be achieved.

Mr. Gerety does not dodge the issue as to where much of the blame for present day conditions belong. He hangs the iron cross right on the truck dealer. He points out that many, if not most, possibly all, truck dealers point out to the prospect that the operating and maintenance costs of the particular truck they distribute is from 15 to 20 cents a mile. The owner works on this basis and when he gets more than 20 cents thinks that the difference is all velvet.

The dealers would make as many first sales if they put the figures up where

they belong and would probably double their repeat sales. There would be fewer failures of truck operators and fewer sales of concerns that get plenty of haulage contracts, but do not know how to run their business. The owner of one truck, instead of quitting the field after his first truck is used up, would have the money to buy another vehicle. More successes would mean more business for the dealer. Many black eyes now handed the commercial hauler would be eliminated.

How Dealer Would Benefit.

The dealer, who is now concentrating on the sale of one truck at the loss of several future sales, and who is thus keeping the trucking profession in the so-called huckster class, might well be engaged in building up this line of endeavor to his own advantage. If the truck buyer were told the truth about costs he would make proper charges,

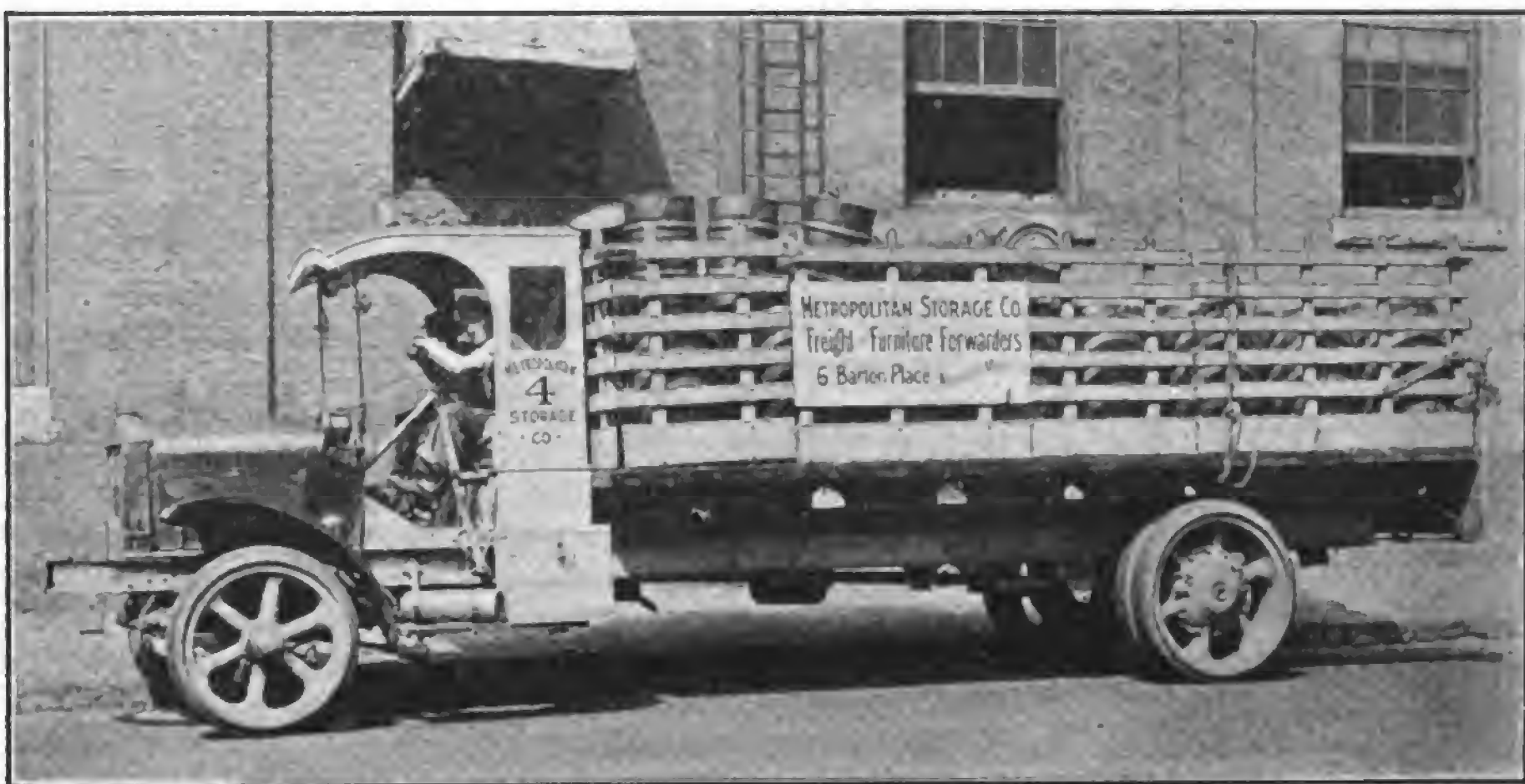
it costs a commercial hauler 23 cents to do a job between the two cities. If that is business we'd like to know.

Less Than Railroad Rates.

Mr. Gerety states that most of the trucking of household goods between Worcester and Boston, a distance of 45 miles, is done at the rate of 22 cents a hundred. Some operators charge as low as 13 cents a hundred. Bananas are hauled between the two cities at the rate of from six to eight cents a bunch. Such figures cannot pay for the time, labor and interest on investment, not taking in office overhead or depreciation.

It is cheaper at present to send freight to Boston by motor truck than it is by railroad, at least in the case of household goods. The railroad rate is 47 cents a hundred. At the same time the express rate is nearly \$1 a hundred.

Mr. Gerety argues that the shipper turns to the motor truck because of



One of the Fleet of Trucks Operated by the Metropolitan Storage Co., Worcester, Mass., for Which a Regular Charge Is \$5 an Hour.

would run his business profitably, would get a truck when his first one wore out and would have a chance of enlarging his business and becoming a fleet owner, all of which would help the dealer.

Mr. Gerety figures that a truck of medium size cannot be profitably operated at less than 50 cents a mile. There are many experts who figure that 50 cents only covers the maintenance and operating costs and does not represent a profit. They claim that office overhead, depreciation, interest on investment, repairs, gasoline and oil, driver's pay, meals and put-ups, outside garaging and other items make the 50 cents a mile proposition look sick. Yet few truck men charge this figure.

At a convention of storage men in New York city recently it was brought out that the actual cost of sending a two-ton truck from New York to Boston and back is \$250.23, all attendant expenses, such as office overhead, depreciation, etc., being counted in, as they should be. As the average charge for this job is \$250,

quick delivery, the doing away with crating, the direct delivery and other conveniences attendant upon power haulage. Why shouldn't the shipper pay for this improved service, says Mr. Gerety? So say we all.

The Worcester operator maintains that because of these special advantages and conveniences the trucking rate should be 50 per cent. more than the railroad figure of 47 cents, or 70 cents. It should be that amount for the truck owner to get a full return for the time, labor, energy, ability and money put into his business.

Educational Campaign Needed.

A campaign of education is necessary, Mr. Gerety believed, to bring before the motor haulers convincing data to show them they must put rates much higher than they are now charging if they are to be a success in their line. It is bound to be a long story, but it must be told and told in full before the hauling industry can be placed on a right business plane.

The Worcester Metropolitan Storage Co. puts the life of its big White truck at 100,000 miles, which is practically five years. The life of the smaller trucks are estimated at 50,000 miles. The company plans to charge against depreciation a sum that will enable the concern to have the ready cash to buy a new five-tonner when the present big truck has done its 100,000 miles and also the available coin to replace the smaller vehicles when they have been driven their allotted 50,000 miles.

Every person who uses one of the company's trucks is obliged to pay his mite toward the purchase of the new truck, which simply replaces the firm's original investment in haulage equipment.

This is the business way of carrying on. Every institution engaged in trucking should do the same thing. It is nothing more than the simplest business essential. Yet the number of hauling concerns which make a practise of building their treasury up for future purchases of equipment are so few as to be the exception. This is a lamentable condition of affairs and the educational programme provided should apparently start with a kindergarten course in finance.

On the subject of return loads Mr.

Gerety has decided and sane views. His attitude is that the truck operator must eliminate the return load proposition in fixing rates. The concern does not exist that is assured of a return load even a fair proportion of the time. The return load is therefore an unknown quantity and is largely a matter of luck. If there is any good fortune coming in this line he feels that the hauler, who takes many chances, should get the benefit of it.

His stand is that the shipper should be charged on the principle of a load one way. Frequently when the price is fixed in advance there may be accidents or delays which make the haul unprofitable. The occasions when a return load is secured will about offset these trips on which money is lost. His experience is that these return loads and the unexpected costs will about even up in the long run, and that is also the experience of many other operators.

Rate Based on One-Way Load.

It would be a splendid thing if truckers could always get return loads on distance hauls and charge accordingly. It would mean more business for the motor trucks, without a question. When a charge is made on this basis the particular shipper is led to believe that this is

the usual charge and will later fight any attempt to make a charge based on a one-way load. Not only will he do this, but he will make trouble for the operators by telling others the small price he has been charged and when shippers find that they cannot get this price again they feel that they are being imposed upon and turn to the railroads or other methods of transportation.

If the charge was always made on the theory that there would be a load but one way all these difficulties would be avoided and the business would be conducted along more stabilized lines. There are many haulage concerns who attempt to make their rates conform to the return load idea, but it is doubtful if any of them ever get return loads in every instance, even when men are engaged exclusively in the task of securing return loads. Mr. Gerety seems to have the right idea. The trucker loses often enough through unlooked for circumstances to give him the right to collect when he does get a return load.

The Metropolitan Storage Co. has had its Hurlburt two years and got its White this spring. The trucks are well cared for, are given a fresh supply of oil every 500 miles and otherwise are treated like the valuable property they are.

TRUCK SAVES COAL FAMINE.

By using gasoline, motor vehicles annually release more than enough coal to supply the entire home needs of the nation, is the pleasant little thought that has been revealed through a study of the situation by the Travel and Transport Bureau of the B. F. Goodrich Rubber Co. In handling short haul freight alone the truck transports material which would require 1,500,000 tons of coal if moved by rail. As a matter of fact if all motor vehicles were stalled today the nation would face a coal famine of unlimited proportions tomorrow. But the truck prices for coal would be out of reach of the ordinary citizen.

In Pittsburgh there is a coal company that moves from the mine direct to the consumer 3800 tons of coal daily, entirely by motor truck. This big fuel concern does not use a single unit of railroad equipment and has increased its highway fleet until it is now operating nearly 800 motor trucks.

TRANSPORT TRUCK TESTED WITH 500-MILE DRIVE OVER BAD ROADS

A Model 70, 3½-ton truck, the latest addition to the series manufactured by the Transport Truck Co., Mount Pleasant, Mich., with an overload of 1500 pounds, was recently driven 500 miles through the worst roads that could be picked in Michigan. Not a single adjustment was necessary and the new drive shaft brake proved everything that the engineering department could wish. Frequently the truck with its heavy load was brought from a 15-mile clip to a dead stop within its own length without a jar or undue strain on any part. The new lubricating system also more than made good.

The trip was over Michigan roads in the worst possible condition. N. A. Wise, chief engineer, and E. A. Blake, foreman of the experimental department, had

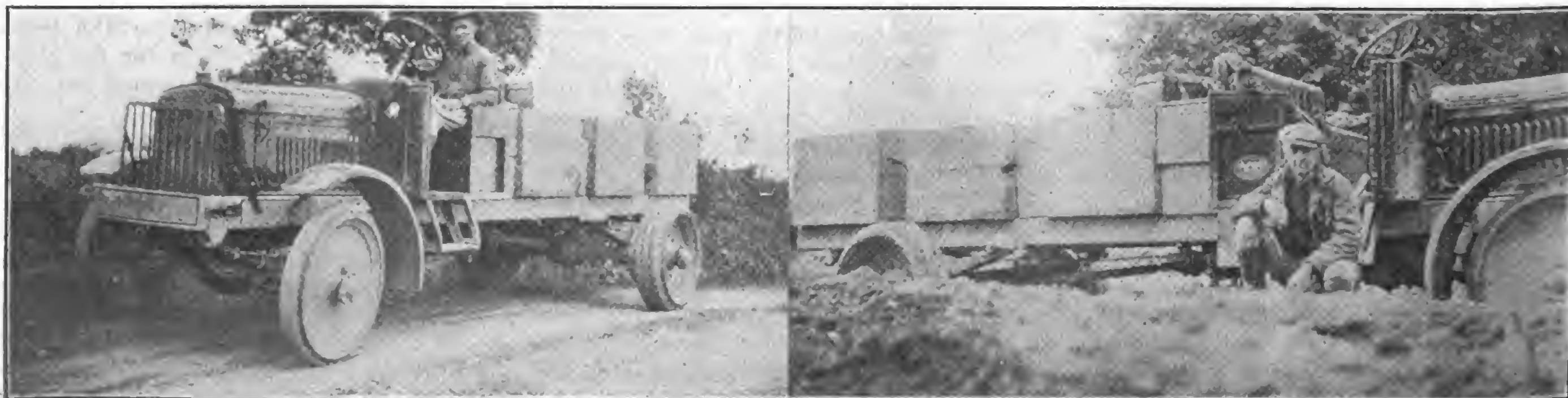
charge of the test. The truck weighed in at a total of 17,150 pounds, including the pay load.

The route beginning at the factory included Saginaw, Bay City, Vassar, Lapeer, Flint, Northville, Plymouth, Detroit, Jackson, Lansing, St. Johns, Alma, returning to Mount Pleasant.

The truck and party set out in the midst of a heavy downpour, which continued for nearly three days, making the roads in some places almost impassable. In addition there was sand such as is rarely found this side of the Sahara, one long stretch of corduroy, roads torn up in rebuilding and numerous hills.

In one case a bridge had been washed out, making it necessary to go down to the bottom of the stream and up the other side. From creek bottom to road level was about 15 feet and a pronounced angle. The truck pulled the full load up this steep incline in a heavy rain storm.

At Milford there is a long stretch of sugar sand. The truck sank to the hubs, but plowed right through.



How a Model 70 3½-Ton Transport Truck Was Tested: At Left, Machine as It Was Driven 500 Miles on Poor Michigan Highways; at Right, Nearly Stalled in Deep Sugar Sand.

BLUE-BLOODED CATTLE DELIVERED TO BUYERS WITH TRUCK



One of the Big Dairy Barns at the Alta Crest Farm, Spencer, Mass., One of the Best Known of New England's Large Estates. Now Completely Motorized.

A TRUCK fit for the kings and queens of the cattle world is the rating Arthur H. Sagendorph, Alta Crest Farm, Spencer, Mass., gives his three-ton White, which has been in service nearly six years and reports for work every morning trim and fit for any haul the day may demand.

This truck houses the blue-blooded Ayrshire cattle which have brought nation wide fame to the Alta Crest farm on trips to fairs and when delivered to buyers. The truck has taken loads of prize cows several hundred miles, going to the furthestmost recesses of Massachusetts, Rhode Island and Connecticut.

A few weeks ago Mr. Sagendorph imported 18 head of Ayrshires and they were held according to regulation at the quarantine station at Littleton, Mass., 40 miles from Spencer. The truck brought 12 of them to Spencer in two loads and took the remaining six in one haul to the Eastern States Exposition at Springfield, Mass.

This truck has six portable cow stalls and stanchions. The cattle are as safe, comfortable and contented on their way to the fairs or a new home as though they were snugly ensconced in their stalls in the modern stable at the Alta Crest farm. They chew their cud on these trips as much as to say, "This is the life." The value of a cargo of these Ayrshire cows is high and Mr. Sagendorph feels that his transportation equipment is on the same scale and is the best that money can supply. The cost of new parts on this truck in nearly six years has not been over \$25. It has never been inside a service station.

This truck has other bodies and is used in many other kinds of work, going frequently to Worcester, which is 15 miles from the farm, and doing every known kind of hauling in the fields and between the farm and the town of Spencer, a run of four miles, which is an uphill haul outward from the town.

The Alta Crest farm has two trucks and the other is naturally a White.

Though smaller, being a $\frac{3}{4}$ -ton machine, this vehicle is the daddy of the pair. This truck has been on the job for nine years, has traveled over 125,000 miles and is as spry and chipper as ever. It is on duty every day in the year.

The smaller White was one of the first trucks to travel the highways of Worcester county. For a long period this vehicle brought milk and other dairy products to Worcester daily, the round trip and the territory covered on deliveries taking in around 35 miles. It was one of the first trucks used to transport milk and cream in that section of the country.

Anyone who knows what New England winters are like must appreciate the kind of going this motor hauler has faced in making daily deliveries to Worcester. As a matter of fact the trips between the town of Spencer and the farm give any vehicle a thorough tryout. The distance is something over four miles and they are rough, hilly miles, the farm site being mighty close to a veritable

mountain top. Worcester wholesalers now send trucks to Spencer for the daily milk, but the little White skips into the city regularly with other dairy and farm products.

Does Heavy Farm Work.

The big truck is used for heavy hauling when not engaged in moving stock. It carries huge loads of grain, lumber, cement, hay, bedding, etc. A typical load of hay is shown in the accompanying illustration. This truck draws hay from field to barn, takes bound grain from field to thrasher and hauls baled hay to market.

This vehicle unloads a car load of grain at the Spencer freight yard and delivers it at the farm in nine hours. It would take a team of horses six days to do this work. The truck carries at least three tons a load and makes six trips a day. Horses would carry 3000 pounds and make two trips a day.

That Mr. Sagendorph has standardized on White equipment is shown by the presence of a White "45" touring car and a White "30" roadster in his handsome garage, which adjoins his magnificent residence in the town of Spencer. He runs out to the farm inside of 10 minutes and back in less time. He finds that his two passenger cars are "essentials" in modern farming.

FIRE DEPARTMENT TRUCK HAULS GASOLINE AND OIL.

The Chicago fire department recently added an emergency gasoline and oil truck to its equipment. It has a capacity of 510 gallons of gasoline and 65 gallons of oil will be on hand at all fires to replenish the fuel supply of the motor fire engines. The tank body contains the gasoline and the oil is carried in cans of oil racked on the side. The average consumption at a big fire is about 100 gallons of gasoline.



Hauling the Hay from a Field at Alta Crest Farm with Trucks, the Haulage and Delivery Being Done Entirely with Machines.

GETTING MOST FROM \$800,000,000 HIGHWAY INVESTMENT

(By A. F. Masury, Vice President and Chief Engineer, International Motor Co., Manufacturers of Mack Trucks.)

OF ALL the various shortages harassing this country today, none is more menacing to our national welfare than the shortage of transportation. It was largely the realization of this fact that caused our government to appropriate some \$800,000,000 to be spent in the course of the next few years for the improvement of highways to permit a more extended use of the motor truck.

In expending this amount the United States is, in reality, buying a certain number of ton-miles of load carrying ability, or in other words highways, the value of which will depend on the amount of material that can be transported over them. The return on the investment will be determined not alone by the type and construction of the highways built, but also by the capacity and design of the vehicles operated over them.

As a first step toward securing the greatest return in transportation from the money spent on highway improvement, the Bureau of Public Roads at Washington has conducted extensive experiments in order to determine the type of highway which will give the largest number of ton-miles of load carrying ability per dollar expended.

Uninformed Legislators Make Decision.

However, the other phase of the problem—that of regulating motor vehicles so as to get the greatest tonnage transported with the least damage to the roads—presents much greater difficulties, since the decision rests, not in the hands of a centrally located group of technically informed men, but with numerous widely scattered legislative bodies.

The ineffectiveness of this can be seen by the fact that methods of restricting motor vehicles vary widely in all parts of the country. While it is certain that every legislature passing a law to establish license fees or restrict traffic, does so in an earnest effort to conserve the roads, there is a strong tendency on the part of those not fully apprised of real facts to assume that small trucks cause less road wear than large trucks and that they should therefore be favored.

Consider for a moment the effect of legislation that has favored the lighter capacity truck. Regardless of whether the material is to be shipped in large or small trucks, the demand for truck transportation remains the same, as practically none of it can be diverted to other channels. As a result, when large unit haulage is discouraged the same amount of freight is merely divided up among a greater number of smaller vehicles, running at far greater speeds and increasing the cost of hauling by a very considerable percentage.

Small Trucks Increase Road Wear.

If this decreased the amount of road

wear and permitted our \$800,000,000 investment to obtain more ton-miles of load carrying ability, it is possible that the increased cost would be justified. But this is not the case. A careful consideration of the effect clearly shows that to substitute smaller trucks for large ones, unquestionably increases road wear. To illustrate—suppose each dollar spent in highway improvement as an arbitrary figure buys 1000 ton-miles of load carrying ability. Bearing in mind that two kinds of weight travel over these roads—weight of load and weight of vehicle—it is obvious that the dividends on our investment will be determined by the proportion of this traffic which is useful weight—or weight of load. The 7½-ton truck has less than one ton of vehicle weight for each ton of capacity; hence, if all the vehicles operating over this dollar's worth of highway were of 7½ tons capacity, then that dollar would provide for 500 ton-miles of useful load transportation. A one-ton truck, on the other hand, ordinarily weighs over two tons itself and so if this size were used entirely the same dollar's worth of road would give only 333 ton-miles of useful load transportation, as two-thirds of the road's carrying ability would be used in transporting the weight of the truck.

Vehicle Design a Vital Factor.

The design of the vehicle, as well as size, has an important bearing on the potential returns on our \$800,000,000 investment. Certain tests conducted by the Bureau of Public Roads at Washington show that road impact, which is the principal cause of road wear, does not necessarily increase in proportion to the size of the truck, but is governed by the amount of weight which a truck carries below its springs.

For instance, a 5½-ton chain-driven truck fully loaded, delivered only 68 per cent. of the road impact pressure produced by a three-ton shaft-driven truck operating under the same conditions and carrying the same tonnage. In a shaft-driven truck, all of the final driving mechanism is carried below the springs and this weight delivers a continual series of direct solid blows to the road, while in a chain-driven truck there is no weight below the springs except that of the wheels and a comparatively light axle.

That is why a 7½-ton chain-driven truck will produce less road impact and consequently less road wear than a five-ton shaft-driven truck. And, furthermore, that is why vehicle design should be considered in framing legislation to derive the greatest possible benefit from our \$800,000,000 highway investment.

Weight Restriction Misunderstood.

Unfortunately, this subject of gross weight restriction is too easily misunderstood. The tendency to jump at con-

clusions in determining which types and sizes of motor vehicles exert the greatest road wear is a very natural one, owing to the popular confusion between "static weight" and "impact weight." To be sure, a 7½-ton truck standing still is heavier on the road than a five-ton truck regardless of whether it is chain or shaft-driven. But static weight does not wear out the roads, as was proved by the government tests and as any one can readily see.

It is the constant impact pressure caused by a moving truck—the repetition of shocks or blows—that alone affects the road surface and its foundation. And it has been conclusively proven time and again that final drive construction has an exceptionally important bearing on impact pressure—that in motion a 7½-ton, chain-driven truck produces less impact pressure, and consequently less road wear than a five-ton shaft-driven truck.

Is it not reasonable, therefore, for the people of this country who are paying this \$800,000,000 for highway improvement and who are vitally concerned in transportation costs as they affect commodity prices, to demand that legislators apprise themselves of the facts concerning motor vehicle design that will provide a method for both lengthening the life of the highways and lowering transportation costs?

New Basis for Legislation.

It is conceded that vehicle restriction in one form or another is a prime necessity in getting the most out of this huge investment, but when proof of the fact that large capacity chain-driven trucks will reduce transportation costs and reduce road wear is so conclusive, does it not seem that vehicle design is worthy of consideration as a basis for framing restrictive legislation?

Is it not the duty of legislators to base their efforts on something more than assumption—to analyze the effect of substituting a greater number of high speed small trucks for fewer large trucks, and to listen or study the tests made by government officials that a consideration of vehicle design will increase the effectiveness of our \$800,000,000 highway investment by at least 50 per cent?

DRIVE AGAINST OVERLOADING.

The Motor Truck committee of the National Automobile Chamber of Commerce has recommended that a campaign be carried on warning dealers and users of the danger of overloading motor trucks. A pamphlet is being prepared and will be given wide circulation. Many states are passing laws against overloading on the ground that the practice is damaging to highways and this campaign is intended to educate owners to limiting loads to the rated capacities.

OWNER-DRIVERS MAKE SINGLE TRUCKS EARN GOOD PROFITS

KEEHN & FURLONG, Auburn, R. I., general trucking, has two trucks. The firm has stopped buying trucks. Its fleet is finished, completed, ended. No more will be purchased.

This concern stands for owner-driven trucks. There are but two members in the combine. Therefore there can be but two trucks.

The policy of driving their own trucks is an established principle. The pair entered into partnership on this basis and they maintain they will stick to this agreement to the end.

They have a five-ton and a 3½-ton Sanford and they get all the work that can be done with these two trucks.

The decision to run only trucks operated and maintained by themselves is going to mean that they will be forced to turn down business and even refuse to do trucking for personal friends, but these young men cut out a path for themselves when they began business and they are not going to make any detours.

Charles A. Keehn and William M. Furlong both comparatively young, put their early working life into railroading. Both were freight conductors. Furlong was on this job 11 years and Keehn eight. They had saved a little money and felt that they might use these savings in a business of their own.

Naturally both were anxious to embark in some enterprise with which they were more or less familiar. Transportation of freight had been their livelihood and they felt that it would be an easy matter to shift from railways to highways. They joined forces as Keehn & Furlong and the new firm is going along on high.

Each Draws Living Wage.

Their agreement provides that two trucks, each driven by a partner, shall comprise their equipment, that each shall draw a living wage in the shape of a weekly salary from the business and that all other receipts shall be banked in a joint account. The profits are only divided once a year, this safeguard being taken in order that money might be on hand at all times to care for any unforeseen contingency.

Their capital only allowed the initial purchase of one truck. This was the five-tonner. The returns from this truck enabled the two capitalists to round out their equipment four months ago by buying the 3½-ton truck.

Their action in limiting the fleet to two trucks is naturally founded on the theory that the owner of a truck will take the best possible care of his own property. The drivers for this firm never take any chances the truck always gets first consideration. The best part of the road is always chosen and there is no careless handling of the vehicle under any circumstances.

Only Repair Due to Accident.

That their view is correct has been shown by results. During the lifetime

of the concern there has been but one repair charge, this coming through an unavoidable collision in which the larger truck participated. There were two seemingly minor defects on the trucks, which were remedied by Sanford "service."

Both drivers put in nine hours a day and work six full days a week. They "soak the oil" to their trucks, refilling the crankcases with new oil at frequent intervals, the vehicles are regularly inspected and are treated almost like human beings. The newer truck is particularly well oiled and, because of its newness, has been using about as much as the larger one. The partners figure on four quarts of oil a week for each truck in winter and about five in summer.

Their cost records show that, figuring depreciation, etc., but not driver's salaries, the trucks cost 16½ cents a mile to operate. The big truck does better than five miles on a gallon of gasoline and the 3½-tonner better than six. They get limit loads on practically every trip.



One of the Sanford Trucks Owned by Keehn & Furlong, Auburn, R. I., and Driven by the Owners, That Are Earning Them Good Revenue.

but are not overloaded. Much of their hauling has been over hilly, rough dirt roads.

Worked Night and Day.

Keehn & Furlong has been fortunate in its business career to date in being tied up with three concerns which, almost without outside work, have kept its motor fleet humping. During the roughest part of the well known 1919-1920 winter the big truck was in the service of William Sweet & Son, big Providence produce dealers. It worked night and day, Messrs. Keehn and Furlong alternating at the wheel. It hauled freight from the cars and also made deliveries.

For several months the five-tonner and for part of that time the smaller truck were under shipping orders for the Atlantic & Pacific Tea Co., carrying great loads of merchandise to branch stores in Woonsocket, Westerly and other

points 15 miles or more from the Providence warehouse.

Three months ago the plant of the American Enamel Co., Cranston, R. I., was almost totally destroyed by fire. Two Sanford trucks owned by that concern went up in smoke. The company was strong for Sanfords and when it needed hauling done naturally turned to a trucking firm operating this type of truck.

Since the fire the two Keehn & Furlong trucks have been almost constantly employed by this company. Even when the enamel people replaced their burnt trucks with a three and 2½-ton Sanford they continued to use the two larger vehicles, the four Sanfords hauling many tons of lumber from the freight cars to the factory site for use in rebuilding the plant.

On a 334-Mile Jaunt.

Most of the hauls by the Keehn & Furlong trucks have been local but they have gone to Worcester and Springfield, Mass., in good time and returned with heavy loads in good condition. This month the 3½-tonner took a capacity

load of wooden handles to a factory at New Durham, N. H., to be enameled, the round trip being 334 miles. Two days were allowed for each way, time being taken to drive carefully and the truck was none the worse for its long grind.

Mr. Furlong pointed to a medium-sized truck, shod with pneumatics, being blocked up in order to get a load on in support of his contention that solid tires answer the purpose on larger trucks. Solids are used all the way round on both the firm's trucks and the partners maintain that pneumatics are a needless expense.

Messrs. Keehn and Furlong are not getting rich in a hurry, but they are making a good living and at the end of the year will have a sizeable pot of money in the bank, and their trucks, piloted by Charley and Bill, will be in far better condition than if driven by Tom, Dick and Harry.

MASSACHUSETTS AND CONNECTICUT APPROVE HAND SIGNAL CODE

REGISTER of Motor Vehicles Frank A. Goodwin of Massachusetts has approved a series of hand signals for power vehicle drivers which are practically the same as have been approved by the state officials of Connecticut, and the Massachusetts Safe Roads Federation has undertaken to carry on a campaign of education among all who own and drive automobile cars and trucks.

The imperative need of a system of signals is admitted. Hundreds of avoidable accidents happen daily that are the

New England states, and with these two commonwealths approving the code there is reason to believe that the other states will approve them.

The Massachusetts Safe Roads Federation plans to have posters printed that will define each of the signals and distribute these to all garages, shops and other places where they may be conspicuously displayed, with the belief that in a comparatively short time they will be adopted and used and understood by drivers. The federation has numerous

The signals are described as given by a driver seated at the left side of the machine, but they can be given quite as well with either hand. The code is as follows:

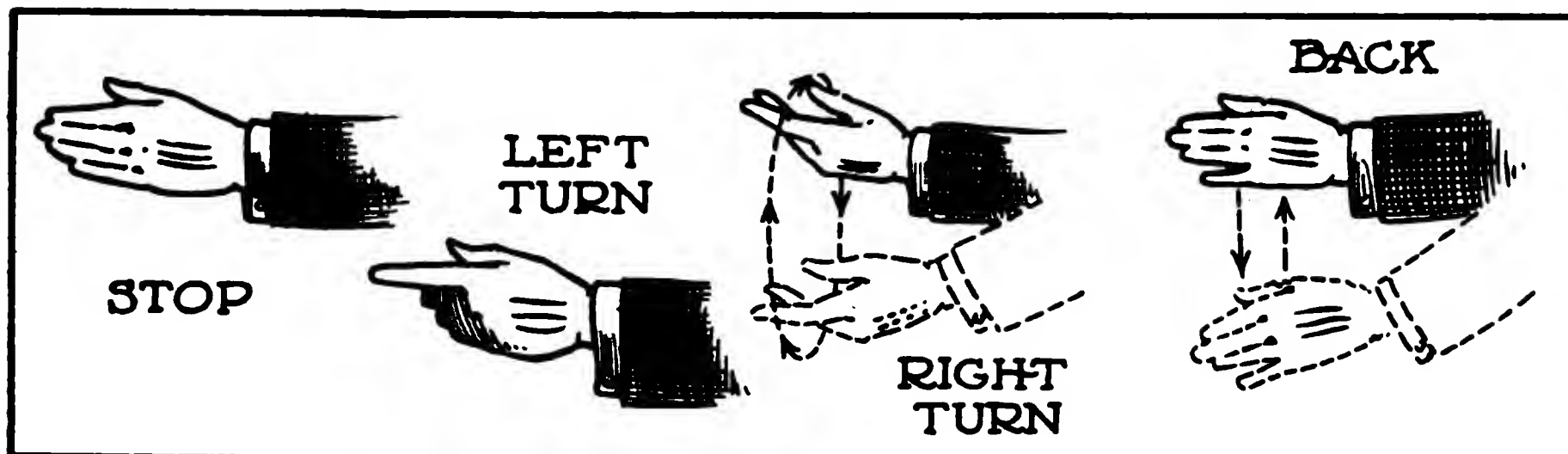
STOP: Extend the left arm and hold it stationary, with all fingers extended and close together.

LEFT TURN: Extend the left arm and hold it stationary, with the index finger pointing and the other three fingers closed.

RIGHT TURN: Extend the left arm with the fingers extended and the palm upward and rotate it from the rear to the front.

BACK: Extend the left arm with the fingers open and close together and the palm vertical, and move it upward and downward from a horizontal position.

TURNING: Give the "Left Turn" signal and repeat it until the vehicle has been turned and can be driven directly ahead. When turning always drive forward and turn into and with the traffic moving in the direction opposite to line of original movement.



The Code of Hand Signals for Power Vehicle Drivers Approved by Massachusetts and Connecticut to Simplify Day Driving.

result of failure of one or more drivers understanding what seemingly is clear enough to the observer. The principal reason is that with no accepted code of signals the intention of the drivers is unknown.

According to Mr. Goodwin the signals, while not perhaps the best that could be devised, are intensely practical and conform to those accepted in Connecticut. Massachusetts and Connecticut have the largest number of vehicles of the six

branches in all parts of the state and it is growing rapidly.

Because of the large number of drivers from other states who enter New England, and particularly Massachusetts and Connecticut, the hand code is illustrated and described. There is reason to believe that the code may be adopted in other states, and that it will eventually lead to better signaling, using the horn, for instance, during the hours when hand signals cannot be seen.

The arm of the driver should always be extended full length and held a sufficient length of time to justify observation of the drivers following.

The reader will note that the signal to stop is what has been very generally accepted for both turning and stopping, and there is little probability of confusion or accident in the event of the driver making the signal not being precisely understood.

ADVERTISING VALUE OF STORE TRUCKS

One New York store has a fleet of light motor trucks which are the talk of the town. Even in that blaze city passersby halt and take a second look when one of these handsome equipage shoots through the traffic. The beauty of these trucks attract every eye.

The store management knows that these trucks are worth the investment as an "ad" alone.

In every city of size in the country there is one or more fleets and many single trucks which make the onlooker stare and which call for admiration. The magazine and newspaper advertiser aims above all else to attract attention. The "different" truck does this without trying.

All of which leads us to the point of our discourse, which is: "Why does not every truck owner who caters to the public grasp the advertising possibility of his truck or trucks?"

The "why" alto's, basso profundo's and crescendoes, it echoes and re-echoes, but the answer falls to Ouija.

Should it be because they never

thought of it they are here gently, but firmly reminded of the opportunity which is being passed up right and left by the merchandising fraternity.

The Wrong Kind of "Ad."

Quite often a truck is anything but an "ad" for the owner. Dirty and begrimed, creaky, wobbly and ramshackled, it suggests that the firm behind it deals in the same style of product.

Just recently manufacturers of national commodities have awakened to the chance to herald their wares through the medium of the truck. Bodies are made up to resemble the product dealt with. The color scheme is carried out. The lettering is the same as the consumer has been wont to see on billboards and in his magazine and newspaper.

These trucks are seen by thousands every day. They register a distinct and abiding impression. They tell that the concern which pulls this stunt is up-to-date. Success breeds success. The average human patronizes the fellow who is up and doing. The person who sees the unusual goes home and tells the

lady of the house, she retails it to the neighbors and so on ad infinitum.

If this kind of advertising is not good advertising we want to know?

The local dealer can put over such an advertising performance with even greater results. One rather expects such a forward move by those who are boosting their goods to a nation. When the home drygoods merchant, marketman or grocer gets out something startling in this line it creates real talk. It's a town sensation. Everybody knows that So-and-So's store is up to snuff. That's the place to trade. If there's a better "ad" to be had for a nominal outlay we know of none, present company always excepted.

Theaters in the smaller city and in some of the larger ones, are in the habit of hiring a truck to haul through the streets a huge sign announcing that May Re P. Ford is appearing in "Decollete" at that playhouse.

If it's good medicine for the theater why not for the butcher, the baker and the candy maker?

NEW TRAILER BRAKE EQUALIZER

SINCE trailers and semi-trailers have been used with tractors and trucks the need of effective brakes on the drawn vehicles has been keenly realized. Good brakes for either tractors or trucks have been developed, but the main engineering obstacle to trailer and semi-trailer brakes has been equalization of shoe pressure on or in the drums.

The Raybestos Co., which for years has manufactured brakes and brake shoe lining or facing, is now commercially producing a trailer brake equalizer that is claimed to afford the driver the same control for trail brakes that has been practical with truck, car or tractor brakes. The equalizer is entirely mechanical, is simple and has few parts, and the Raybestos engineers maintain that failure is practically impossible.

The equalizer is so designed that it may be used with one or several haulage units in a train, provided that the rocker arm of each is connected. As designed the device consists of a supporting bracket, an equalizing arm on which are mounted two bell crank levers, clevises for coupling the pull rods and two equalizer rods, one for the trailer and the other for the truck or tractor. The supporting bracket may be mounted on the rear end of the truck or tractor frame or the front end of the trailer frame.

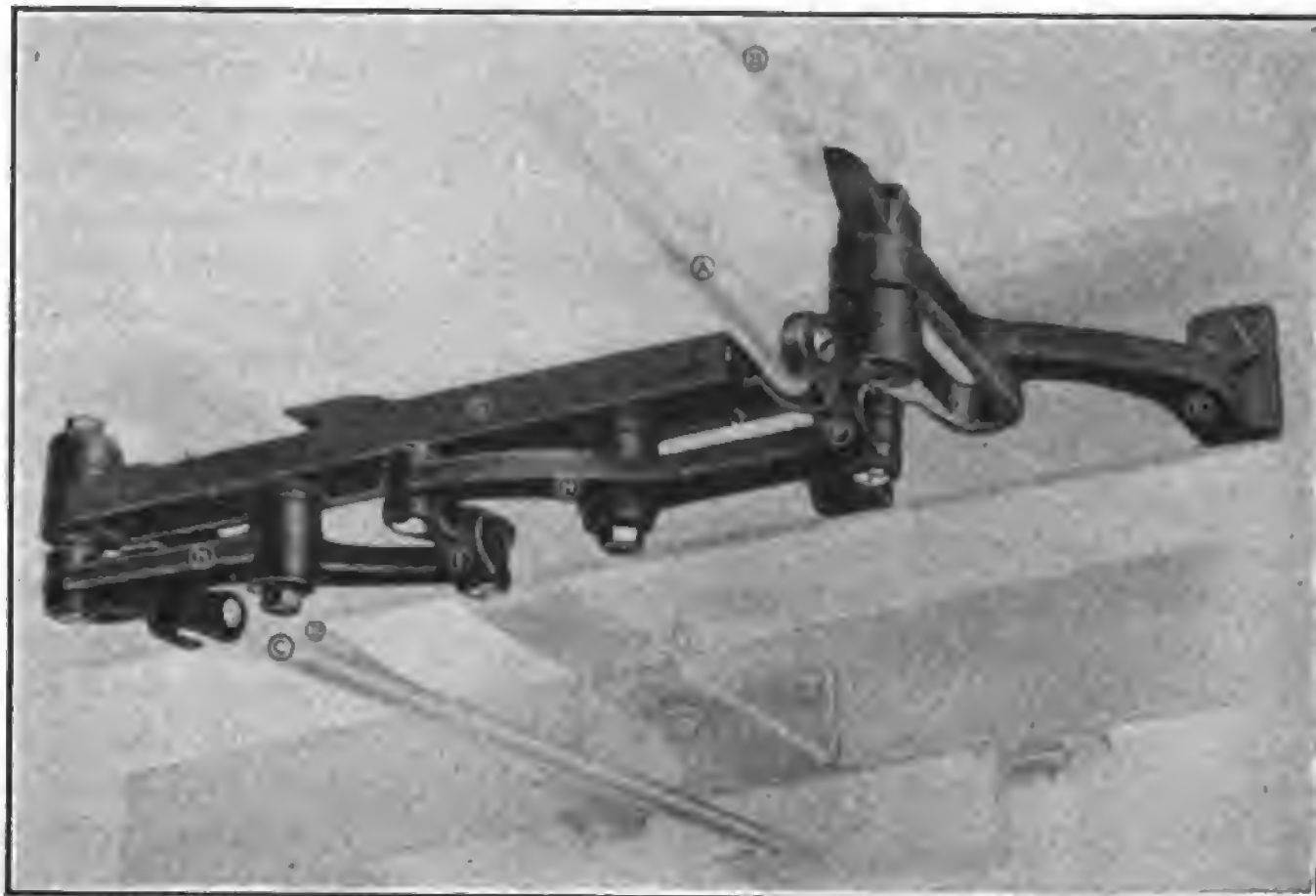
In the supporting bracket is a horizontal slot or guide in which the stud in the end of the equalizer bar may swing.

The bar has such movement that the tractor and trailer may move on any curve and still leave the trailer brake under perfect control. A distance rod holds the stud in the equalizer bar always in the same relation to the trailer, but the angle may be changed. The other end of the equalizer bar is held by another rod that has clearance so the angle may change.

On top of the equalizer bar are two bell crank levers connected by a clevis. The outer end of one lever is coupled to the tractor brake pull rod by a clevis. The outer end of the other lever is coupled to the trailer brake pull rod. When the tractor brake is operated the pull rod, through the levers, actuates the trailer brake.

The assembly includes but 25 parts, studs, bolts, clevises, washers and cotter pins, and of these but six are moving. Most of the parts are standard productions that can be obtained in accessory stores and garages, being used in brake construction of standard types. If the

tractor and trailer are to be used continuously the equalizer may be installed on the truck, but if the trailer is to be used with more than one tractor or truck the equalizer may be mounted on the front of the trailer and connected by a hook with pull rod from tractor brake.



The Raybestos Trailer Brake Equalizer, Showing the Manner of Installation and Connections.

Claim is made that when a trailer with this equipment is driven down a grade its movement may be controlled so that it will not "ride" the tractor nor will it swing from a high crown to one side, and that a train of trailers can be handled quite as effectively as one unit.

TRUCKS WITH SPECIAL BODIES HAUL STRUCTURAL STEEL.

Three Boston concerns are using Selden trucks, with special bodies, to transport structural steel. These are the Boston Structural Steel Co., the Midvale-Cambria Steel Co. and Maloney & Kickler. These bodies are 17 feet from the back of the cab by seven feet six inches in width. The frame of the body is built entirely of steel angles with pockets to receive the stakes to which are attached removable sides. On the front end is riveted a bent of steel properly braced to the body, from the top of which extends an angle iron down to the front end of the chassis. This is attached to the chassis by cutting out the rivets connecting the cross beam on the front end, to which are attached steel plates riveted to the chassis so as to provide a connection for the angle iron.

To this plate is attached a frame work of angle iron extending across the radiator and approximately 18 inches wider each side than the width of the cab. This frame receives the ends of long beams that overhang the body and enables the concerns to haul beams from 40 to 60 feet long without extending them over the top of the cab. This arrangement is very convenient to unload at buildings, all the driver has to do is to take a crow bar and dump the beam off.

The frame work extending from the top of the cab has enabled the owners

to haul steel trusses and girders from 40 to 80 feet long. They also haul on this truck derricks, and the masts of some are 85 feet long.

FRUEHAUF BUSINESS GROWS.

Employees of the Fruehauf Trailer Co., Detroit, were presented with the quarterly bonus at a banquet held early this month and, despite the discouraging conditions in the industry and in the face of a doubling of the organization in the past six months, it was the largest yet distributed by the company. Sales managers from the South, West and New England districts reported an excellent business outlook.

SALES MANAGERS TO MEET.

The Motor Truck Sales Managers' Association will meet at Detroit, Nov. 18 and 19, and elect officers and also shape policies for the coming year. A number of matters of vital importance to each member will come before the meeting.

NORWAY ADMITS TRUCKS.

The decree of the Norwegian government prohibiting the importation of goods classed as luxuries takes in motor cars for passenger traffic and motorcycles, but does not include trucks.

ASPHALT ENGINEERS TO HOLD ROAD RESISTANCE TESTS.

The Asphalt Association, 25 West 43rd street, New York city, in coordination with other interests, is to undertake exhaustive tests in order to definitely ascertain the type of road surface which will the least wear automobile tires. A series of tests to determine how best to resist the pounding impact of heavy truck wheels will be conducted simultaneously. The asphalt engineers are confident of the cushioning power of asphalt to absorb the heaviest blows.

Eight million automobiles and trucks with their 32,000,000 tires need only call for an average annual outlay of \$125 to make the total cost for tires \$1,000,000,000. This is far in excess of the annual expenditure for construction and maintenance of highways and if a type of surface is designed to effect a reduction of only 10 per cent. in tire costs, it will release a sum which capitalized at five per cent. will amount to \$2,000,000,000.

Officials of the Asphalt association frankly express their belief that the most gruelling tests which may be designed cannot fail to demonstrate that the asphaltic types of highway with their smooth resiliency are the best conservers of automobile tires. When the tests are made they will be under the auspices of a national board of disinterested engineers whose findings will be beyond any criticism of bias or prejudice.

MASSACHUSETTS BOY WINS REPUBLIC \$1000 PRIZE ESSAY

THE \$1000 University Scholarship offered by the Republic Truck Sales Corporation, Alma, Mich., builders of the Yellow Chassis Republic motor trucks, for the best essay submitted by a high school student of the United States in connection with the recent National Ship by Truck and Good Roads Week observance, was won by John M. Donovan, Jr., who was a senior at the Turners Falls, Mass., high school when he competed in the event.

The award to the Massachusetts boy was made by the committee appointed by Commissioner of Education Claxton of the Department of the Interior, which examined the more than 200,000 essays submitted. Young Donovan's contribution also captured first prize in the Massachusetts state contest. The essay shows such a deep knowledge of the subject and reveals such a firm grasp of the situation that MOTOR TRUCK herewith presents it in full.

SHIP BY TRUCK AND GOOD ROADS.

By John M. Donovan, Jr., Turners Falls High School, Turners Falls, Mass.

The development of the industrial and commercial fields of the United States has been so great and rapid that a point has been reached where it is almost impossible to obtain swift and efficient transportation. This is the state of affairs in our country today. Our great industrial concerns are doing such enormous amounts of business that they have hopelessly congested all inland transportation, which at present is awaiting some new-found means to solve its problem.

This solution rests in the recognition of a great new method of transportation that has grown up before our eyes—Motor Transportation. The growth of the motor truck in numbers and efficiency during the past 10 years has been most remarkable, and the work that is today being accomplished with it, by our farmers, and great manufacturing concerns proves its immense worth.

Motor Transportation is invaluable to manufacturing concerns. The truck with its almost unlimited capacity, great endurance and rapid and economical service, is vitally necessary to all concerns for short hauls and inter-community work.

A natural and most logical conclusion to that well known statement, that railroads serve as the "long arm of commerce," would be that motor trucks serve as the "fingers" to that long arm, and "reach out here, there and everywhere to pick up the load, or place it at its destination."

Realizing the great importance and necessity of motor transportation, it must be evident that there should be

cooperation with our railway service, rather than competition. For although it is an established fact that there is a field where movement by rail carrier is not economical, and where service could be better performed by motor trucks, it can be plainly seen that to compete in the longer hauls with rail carriers under normal conditions would be uneconomic and unwise. For on long distance hauls motor transportation could not be as rapid and efficient as railway service, because of lack of speed, of capacity, and of endurance, in comparison with our modern railway facilities for long distance hauling and hard usage. But in developing territory not touched by rail, in intercity movements, and in short hauls, motor transportation excels. So it may be concluded that a system or schedule arranged between motor and railway interests would not only be beneficial to both parties, but would give an increased efficiency to public.

The adoption of motor transportation, however, is only one-half of the solution, for good roads are vitally necessary to truck activities on an efficient basis. Therefore, with the development of our motor truck system, our roads must be improved and extended. "Roads were the first method whereby communication was established and it is the cheapest method." Therefore, "whenever we have a thing that is good and cheap, the next step to take is to make it better and cheaper." "America should have good roads; she should have better roads; and finally she should have the best roads in the world," for every dollar and effort spent to that end will be returned a hundred-fold. Good roads quicken travel and make our country more united, and the benefits of road improvements reach every little village in our great country. We ought to spend money, and thought, and work to build up a vast system of roads, so that every home in each community will be easily reached by good roads, and we ought to concentrate government funds on our national highways, to release state and country funds on state and country roads, and to study highway transportation and distribution problems.

Therefore, to accomplish these ends the National Ship-by-Truck Good Roads Week movement has been introduced. It is to prove that the motor truck takes its place today as the vital factor in short haul transportations; that it has been a power in the development of our big manufacturing, wholesaling and retailing institutions; and that farm territories, formerly isolated, are now within reach of market, because

of good roads and motor trucks.

Consequently to get the greatest possible benefit out of this solution of our railway congestion problem, excellent and extensive roads must be built for the motor trucks, for the two movements naturally interlock.

TRAFFIC "HORSE SENSE."

The Traffic Motor Truck Corporation, St. Louis, Mo., has produced something above the ordinary in its September issue of "Horse Sense." It presents in pictures the story of the making of the Traffic truck in the largest factory in the world devoted to the making of 4000-pound capacity trucks. Views of every operation from the time the material is unloaded until the completed truck rolls out under its own power are shown. Also are reproduced pictures of Traffic trucks in service in many part of the world. Much valuable information is presented and the booklet is in every way an interesting publication for dealer and prospective truck owner.

FIGHT TRANSCONTINENTAL RATE.

There will be a hearing before the Interstate Commerce Commission at Washington Nov. 4 and 5 on an exception filed by the National Automobile Chamber of Commerce to the proposed transcontinental rate on the ground that automobile and truck shipments, being one of the heaviest items of traffic to the Pacific coast, are entitled to commodity rates for this long haul on a lower basis than any class rates that may be decided upon, and also that the proposed minimum weights are excessive on the longer freight cars.

TRUCK CUTS SUGAR COST.

It is estimated that two two-ton Acme trucks owned by Stephens & Swain, Allentown, Pa., recently hauled a total of 3,222,335 pounds of sugar in a period of five months, the company netting a profit of \$835.16 in that time over former methods of hauling. The carrying of sugar by trucks the country over has been a factor in cutting down the cost of this commodity.

DISTRICT HOUSE ORGAN.

"Gramm-Bernstein Truck News for Southern California" is the title of a house organ issued by Walter H. Fisher, distributor of Gramm-Bernstein trucks, with headquarters at Los Angeles. The publication will be placed in the hands of truck owners throughout Southern California.

In Pennsylvania motor truck registrations totaled 50,226 up to Sept. 11. The total registration for 1919 was 40,406.

NEW PHASES OF HIGHWAY HAULAGE

RATES TWO FIVE-TON TRUCKS AND TRAILERS EQUAL TO 50 HORSES

Olaf Nelson, Wellsville, Utah, has two five-ton White trucks, with trailer equipment, which he regards as better than 70 head of horses. This view has resulted from actual work performed and is founded on experience.

Confidence in the work that his trucks could do recently secured for Mr. Nelson the contract to improve a stretch of 8.13 miles of the Wellsville state road in Northern Utah. He was the lowest bidder because he knew just what his trucks could do. Secure in his knowledge he bought his own gravel pit even before he got the contract.

A team of horses, Mr. Nelson had estimated, could accomplish the maximum haul of 16 miles, making one round trip with a wagon containing two cubic yards of gravel, in an eight-hour day. One truck, on the other hand, could make six round trips daily and carry five cubic yards of gravel each time. One truck alone would thus do the work of 15 horses; with trailer equipment the truck could do the work of 20 horses.

Random glances at the record book showed each truck to have hauled an average of 45 tons over one seven-day period. Over another period of six days, hauling various distances, one truck hauled a total of 317 tons of gravel. The weight of one cubic yard of gravel is 2800 pounds.

During the long, severe winter months, when road building was necessarily at a halt, Nelson's White trucks were not. They were busy on numerous hauling jobs. Not only were the trucks idle fewer days during the winter than horses would have been, but when they were idle the Whites did not eat into profits which they had previously earned by piling up a feed bill on their owner.

BIG NAPOLEON EXPORTS.

The Napoleon Motors Co., Traverse City, Mich., is sending its product to nearly all points of the compass and is looking for more worlds to conquer. Requests for distributors' rights have come in from climes hitherto unreached and the few points untouched will soon be penetrated. Napoleon trucks are now being shipped to England, Scotland, Holland, Spain, India, Cape Town, South Africa, Philippine Islands, Japan, Columbia, South America, Norway, Ireland and Belgium. Constant reorders show this truck has hit the mark on other shores.

In the meanwhile the company is not overlooking its domestic business and the scope of its sales organization is being constantly enlarged. The financial flurry failed to hold back the rising demand and production has been rushed along at the capacity point.

150-MILE TRUCK DELIVERY.

Strauss & Co., New York city, sign makers, deliver direct to customers within a radius of 150 miles with two Selden trucks. They ship their goods overland as far north as Boston and Worcester, Mass., and south to Philadelphia and Atlantic City. These trucks have played a part in erecting many of the huge electric signs that brighten the city's Great White Way. Mr. Ben Strauss of the firm says: "By doing our own delivering we save the time and expense of crating and shipping, cut out loss through breakage, and get the sign on the job quicker than we could by any other means. We save the railroad fare of our workmen, and enable them to work better because they have all their tools and equipment right along with them. All these things mean that we can give our customer prompt and efficient service, and that's what he's paying for. Many of these big signs are put up on a rental basis and every day's rental loss is so much cash out of the sign owner's pocket."

MOLINE FARM TRUCK.

The Moline Plow Co., Moline, Ill., is in production on a large scale on its first truck, Model "10," a 1½-tonner, scheduled as the first of a series. The company's first thought was naturally with the farmer with whom the organization has been dealing for years. Model "1055" is designed primarily for farm use and anticipates a warm welcome where the name Moline stands for quality. The truck will be marketed through Moline tractor and implement dealers.

The Moline motor will be used, the same as now employed in the Moline Universal tractor. Dealers already have stocks of repairs for this motor on hand and service men who have been handling tractors will joy in the convenience ensuing from fact that all tractor and motor truck parts are interchangeable.

Cord pneumatic tires are standard equipment.

INDIANA TRANSPORT SERVICE PLANS USE OF FLEET OF 50 TRUCKS

The Indiana Highway Transport & Terminal association began operations on Oct. 1 and will give a motor truck freight service to Indianapolis and the territory for 60 miles around. Eight routes have been established and it is planned to have 50 trucks on these so-called Sunbeam Lines within a half year. The association has secured the abandoned C. I. & W. freight depot, six blocks from the city's commercial center, and will use the building as a central station and clearing house for shipments.

The association will use trailers and also plans to standardize all bodies, which will be demountable. Refrigerator cars will be used to handle fruit in hot weather and a uniform temperature will be maintained in winter. The association will have its own garages and repair facilities at Indianapolis. The Sunbeam Lines will reach Terre Haute on the west, Richmond on the east, Bloomington via Martinsville on the southwest, Columbus and Greensburg on the south by way of Franklin and Shelbyville and Frankfort, Lafayette and Crawfordsville on the north.

The new rates for motor truck service to and from Indianapolis follow:

Distance	Rate per cwt.-mile	Terminal charges
1 to 10 miles....	3 cents	12 cents
10 to 25 miles....	2 cents	12 cents
25 to 50 miles....	1½ cents	12 cents
Over 50 miles....	1½ cents	12 cents

Household goods and articles classified higher than first class in the official steam road classification are to be charged for at double the rates named.

Tom Snyder, who is widely known in the industry, is secretary of the association. Roy D. Adams is president, C. W. Abrahams, treasurer, and Lewis Taylor, secretary of the Indiana Federation of Farmers, vice president.



One of the Five-Ton White Trucks Used for Highway Construction by Olaf Nelson, Wellsville, Utah, That Show Unusual Capacity.

EVERY TRUCK A GOOD MACHINE IN THE OPINION OF OWNER

(MOTOR TRUCK Representative Talks with 1000 Owners and Finds Out How They Feel.)

A MOTOR TRUCK representative who has been hobnobbing with truck owners since the first of the year, has made a startling discovery, which he puts down in black and white as follows:

EVERY TRUCK IS A GOOD TRUCK.

Before this statement starts an argument we will give the experience of the man who talked with those who have invested in power hauling equipment and who are satisfied with their bargain. This individual alleges that during the present year he has conversed with nearly 1000 owners, to all of whom he has put the question:

"How do you like your truck?"

In just five instances the owner was not an enthusiast for the make of truck he was operating.

Peculiarly enough only two types of trucks were involved in these five negative replies.

Three owners of a certain brand stated that their vehicles had a weakness and in each case the complaint was the same. This trio declared that they would change with their next purchase.

The two men who owned trucks of the other make also agreed on the fault, but while it was an important one, they felt that it was more than outweighed by the good qualities of the machine, and they would stick to this type.

In the case of the second truck the writer knows of many owners who would not trade their used machines for a new model of any other make on the market.

Also the writer has found owners who have run the truck first cited with such good results that they deem it the best that money can buy.

There you are!

A Knocker Here and There.

We have heard trucks decried. We've heard a man say that he would go back

to horses before he would use an assembled truck and we've listened to an owner wax equally vociferous against the vehicle which is not made up of parts designed by outside specialists.

A number of mill owners and others whose trucks are called on only for part time service have railed against cost in our presence. These men are so situated that they do not get capacity performances from their hauling equipment, nor will they rent their trucks when not using them. In the same breath these same owners say that they could not do without trucks and that these vehicles have not infrequently saved their factories from shutting down.

Under cross-examination they have admitted that the saving in one such emergency is easily worth the price of many trucks. They concede that as insurance against such losses motor haulers are a profitable investment. If they could have this insurance without paying for it so much the better, which point is well taken from their angle.

The Owner Driver Knows.

These few little eruptions against the truck are offset manifold by the 990 odd who are truck rooters to the core. If you want to hear a dyed-in-the-wool truck booster the fellow to see is the owner-driver. He lives with his truck and regards it as a human being. Ask him. He knows.

"How do you like your truck?" is almost an insult to him. As if anyone could help but like it. There is only one truck made and that's the one he drives.

"You ought to see her take the High street hill last Tuesday with a ton overload.

"Say, she eats up the roads, dirt, mud or snow.

"Show me some job this bird can't get away with."

"Had her two years and never been stalled yet."

"She never stops except to pull some other truck out of the mire."

"She's the only truck that got through to — in the big storm last winter."

That's the way they go.

They even boast of her speed.

"I never hit 'er up for fear she'll run away."

"Say we went to — and back in three hours. Some going, eh."

"I have to dodge the motor cops with this baby. She burns up the highways."

Nine times out of 10 you find a fleet owner has standardized on some make and he is always blunt in his opinions:

"There's only one truck and I've got it."

No More War Trucks.

There is no question that during the war some trucks fell down. The quality of materials was not always up to the standard. The manufacturer got the best he could, but it was not good enough. Today the makers are putting only superior stuff into their machines and when a truck goes bad it is due to abuse or improper care.

Of course, it is natural for every manufacturer and his associates, the executives, distributors, dealers and salesmen, to trumpet the fact that their particular truck is the only one that can stand up under pressure. There is no doubt that some trucks are better than others. We know of no truck today which cannot successfully cope with ordinary transportation demands and is not a good investment.

The survey by a MOTOR TRUCK representative briefed above is only one of a thousand indications that in this Year of our Lord 1920

EVERY TRUCK IS A GOOD TRUCK.

RURAL SCHOOLS NEED TRUCKS.

A need for 440,000 motor trucks in getting children to the consolidated rural schools of the country is disclosed through a recent investigation by the Firestone Ship by Truck Bureau, Akron, O. This survey was carried on for seven months and was thorough to the last degree. Consolidation is going forward rapidly in the central and middle western states, but is attaining its most notable successes in Ohio, Indiana, Iowa, Colorado, Tennessee, Minnesota and adjoining states.

ATLANTA'S BIGGEST FLEET.

The Morrow Transfer & Storage Co., which has been in business since 1869, has the largest truck fleet in Atlanta, Ga., 20 Seldens. The first Selden bought in 1912 is still in service. This concern has an intercity transfer department

which moves goods of any description within a radius of 150 miles. The company has a modern service station all its own, having a machine shop, welding shop, blacksmith shop, body shop and paint shop, as well as the necessary repair and assembling department. A stock of repair parts is also carried, supplemented by the factory service station maintained in Atlanta.

GOOD SERVICE AT LOW COST.

D. F. Poyer & Son, Transport truck distributor at Los Angeles, Cal., tells a remarkable story in the Transport Headlight for September, disclosing the fact that although "Poyer's Dependable Service" is widely known and recognized in its field, the operation and maintenance of its service department from Nov. 1, 1919, to March 31 of this year cost but one-fifth of one per cent. of its gross

sales. The fact that members of the service department are always ready to give free information to owners and drivers doubtless has much to do with this happy result. Mr. Poyer declares that there isn't a Transport truck owner in his territory to whom he would hesitate to refer a prospective buyer.

CALL FOR BIG MACKS.

A striking illustration of the growing importance of the Motor truck in industrial transportation is the production figures of the International Motor Co., New York city, maker of Mack trucks, which show that nearly 60 per cent. of its present output is in the larger sizes up to 7½ tons. Only 40 per cent. of production at the end of last year was of the larger units. For the June quarter the output of Mack trucks was at the rate of 10,000 a year.

STANDARDIZATION OF SALES ETHICS FOR DEALERS AND SALESMEN

WHILE the motor truck industry has its eyes turned toward standardization, the suggestion has been offered by a fellow who immediately moved out of the neighborhood that it might be a good proposition to standardize ethics among dealers and salesmen.

There may be some excuse for the commercial hauler who, in many instances, must keep his truck moving to earn his daily bread, to employ cut-throat methods. The dealer and salesman can offer no such alibi against working on a more dignified plane. If truck merchandising is to be a profession there should be some unwritten rules and regulations for its guidance. From what we can hear these rules and regulations are sadly needed.

The Motor Truck Association of Philadelphia has recognized the lack of an esprit de corps among distributors, dealers and salesmen and is on the eve of forming a bureau to do away with the policy of paying double what they are worth for "trade in" trucks just to beat off competition.

This is the first step of many which must be taken before truck distribution is conducted in a manner which befits the caliber of the men who are laboring to put this industry on the lofty peak where it belongs. Let us hope that the movement goes through without missing a cylinder and that it spreads.

The idea of sane business men sacrificing a profit and even suffering a loss to get ahead of a fellow craftsman is an absurdity that calls for a quick jump into reverse. It's a habit in no other business. As a matter of fact it isn't business at all. It's the height of tomrottery and asinenity. It's a game in which grown men should not be engaged. We know of no more typical instance of biting off one's nose to spite his face.

Philadelphia Is Awake.

If Philadelphia can put over this proposition and we have an idea that Philadelphia (contrary to the generally accepted theory of that city, speed), is just the little burg that can go through with colors flying, there is bound to be a country wide awakening as to the common sense angle of this action.

If the Quaker City gets away with this why not follow through with a stroke in behalf of the wiping out of the practise of divvying commissions with buyers, whether states, municipalities, towns, corporations, firms or individuals? This means a wholesale getting together, but why not?

Let the industry, through national associations, fix a day when the truck distribution forces of the nation will eliminate this custom for once and for all. Then turn over the new leaf and keep it turned. Think of all the extra money it would legitimately bring those who are keeping the truck factories running

by putting their products into the hands of the public. Truck selling is no mean occupation. The man who engages in it is worth and should get every ounce of his salt. A little cooperation would accomplish this devoutly-to-be-wished summation. Let's go!

Stealing Rival's Stuff.

It's pretty rough sailing when a game is played so that a truck salesman has to do a Sherlock Holmes to hoodwink his competitors. We know a number of salesmen who have special license numbers on their runabouts so that when they go fishing for prospects or interviewing possible buyers they can elude rivals who know their registered number and are on their trail to steal prospects. 'Sruff is right!

Stories are rife of sales managers who close deals with buyers who have been worked up to purchasing pitch by salesmen and who call at the sales station to wind up the transaction, the s. m.'s failing to make good with the salesmen.

There are a number of other petty performances, too petty and too tricky to be even detailed in type, which give a black eye to the profession of truck distribution and which might be blue pencilled without any gnashing of teeth on the part of those who would see the truck business live long and prosper.

Standardize moral standards first! Then mechanical standardization will be the merest routine.

RAILROADS PROMOTE GOOD ROADS

At Akron, O., Sept. 27 and 28, for the first time in the history of the United States, the steam and electric railways, the waterways and express companies were represented at a conference, the prime purpose of which was to advance the cause of good roads. This meeting marks the first step in a national movement to unite all transportation interests for the general good of the country. These combined interests have at their command the means to solve the problem of distribution and wield a mighty force in putting the cost of living, where it belongs.

Throughout the entire session, lasting two days, due credit and appreciation was given the railroads for the work performed, while at the same time a determination was expressed to make a larger and more extended use of the motor vehicle through the construction of more lasting types of road.

Committees were appointed to lay out and direct a movement to coordinate all existing transportation agencies, to the end that the public may have that form of common carrier service which is most efficient, economical and practical.

Highway officials from practically every section of the country were in attendance. The motor industry was well

represented, as was the S. A. E. and the government.

One of the serious phases of road development, that of subgrade and its relation to the road surface, came before the conference, under the leadership of C. M. Upham, state highway engineer of Delaware, and vice chairman under General Coleman Dupont, chairman of the sub-grade committee of the Federal Highway Council.

Cooperating with a group of leading engineers on this committee are leading executives in the motor industry. Their definite and express purpose is to open the way for the construction of roads that will meet not only present, but future traffic on the highway, and permit the motor truck to assume its inevitable position as a real factor in transportation.

The relation of the highways to railroads, waterways and other forms of transportation to the end that such carrier agencies may be properly coordinated in public service is in charge of a committee headed by W. J. L. Banham of New York, member of the executive committee of the National Industrial Traffic League.

An educational committee under the chairmanship of W. E. Blodgett of Phila-

delphia was formed to cooperate with the Educational Bureau in furthering the efforts of the council in practical and intelligent highway development.

Meetings of a similar character will be held at other centers where the production of highway rolling stock is a leading industry.

REPLACEMENT TOOLS.

The J. & B. Manufacturing Co., Pittsfield, Mass., maker of the J. & B. coils, has developed a coil for replacement purposes for which broad claims are made.

The coils are designed for small service stations and garage trade, and with the special brackets furnished will fit nearly all cars, thus necessitating carrying only a small stock of coils and the special fittings.

M. T. A. OF A. MOVES.

The Motor Truck Association of America, Inc., is now located in commodious quarters in a remodeled brownstone building at 144 West 65th street, New York city. The new headquarters are but a few blocks uptown from the former offices in the United States Rubber building, 1790 Broadway.

A SUGGESTED SALES LETTER FOR LIVE TRUCK DEALERS

A reader of MOTOR TRUCK, who has been in the automotive business for some time, but is just breaking in as a truck dealer, has asked for a form letter to be sent to prospects in his city, which is a sizable one in New England. He handles a medium priced truck, which has been on the market some time.

A member of the editorial staff was asked to get one out that would answer the dealer's purpose. He produced what is printed below. In the MOTOR TRUCK office there is a difference of opinion as to whether the writer's output is good, bad or indifferent. It was sent to the dealer with a question mark after it. A note from him says that it hits the mark. He has sent it to a list of prospects and it is already producing results which at least hits the mark.

That readers of MOTOR TRUCK may judge for themselves, here is the letter:

Dear Sir:

I am writing you in the belief that you are willing to pay less for your trucks if you can get the same quality and quantity of service for less.

The A— truck is as good as any and cheaper than most.

We've got everything the other fellow has that's good, nothing he has that's bad, and some good things he hasn't got.

The A— is a he-truck, built right and sold right.

We've got a family tree—but unlike the high priced trucks—we don't charge you for it.

We haven't got dress suit executives nor marble floored sales stations for which you pay. We do away with other overhead, charging only for goods delivered.

That's why we are selling trucks

hundreds of dollars cheaper than some, trucks that are working alongside of the top-priced article in and around W— today and more than making good.

It will cost you nothing to be shown.

Our service IS service.

Our payment terms in these tight-money days will startle you.

We can make immediate deliveries on most models, but whenever we can't, and you're in a hurry, we will send a man to the factory at — and drive the truck overland to your door.

Give me a chance to prove all this when you need a truck. Let me show you how the A— can dig in and do the work.

Sincerely yours,

A— B. C—

SEEN FROM MANY VIEWPOINTS

A RECORD TEXAS HAUL.

A Duplex Four-Wheel Drive truck, operated by Roy Davis of Albany, claims the record haul in Texas for a truck of that capacity. The trip was 27 miles from Albany to a point near Brechembridge over typical Texas roads.

The load consisted of an air compressor outfit for the Victor Pipe Line Co., and weighed 26,000 pounds. The fact that it took two trailers besides the Duplex gives a better idea of its weight and bulk. It might also be added that a bridge broke down under its weight.

The entire trip consumed 18 hours, but as six hours were spent in rebuilding and reinforcing a bridge—which wasn't used to 13-ton loads—only 12 hours of actual running time was registered.

The contract was based on a rate of \$2 per hundred pounds, and the successful termination of the trip brought a check for \$520. Lloyd Summers, the driver, stated that he experienced no difficulty at any point on the trip—not even when he stopped to haul another truck out of a hole.

TO MAKE TRUCK PARTS.

Arrigoni-Pfeiffer Motors, Inc., has been incorporated at New York city to manufacture motor truck parts, etc. The capitalization is \$50,000. The incorporators are A. Arrigoni, E. Leindorf and A. Pfeiffer.

LAPEER CHANGES NAME.

The Lapeer Trailer Corporation is the new name of the Lapeer Tractor Truck Co., Lapeer, Mich. The company's capital stock has been increased from \$100,000 to \$300,000.

MOTOR TRUCK ASSOCIATION TO HOLD NEW YORK'S ONLY TRUCK SHOW

The Automobile Dealers' Association, Inc., New York city, which had been building the frame work for a truck show early in the new year, has withdrawn from the field and the Motor Truck Association of America, Inc., now has a clear track for its exhibition to be held in the Twelfth Regiment Armory, at Columbus avenue and West 62nd street, two blocks from Broadway.

The show is set for Jan. 3-8, the week in advance of the passenger car show booked for the Grand Central Palace, Jan. 8-15. The armory is not only ideally located, but also has other advantages, among which are size. It is claimed that this building provides one-third more space than does Madison Square Garden.

While the show will be on a big scale it will be designed primarily for the benefit of the local trade. It will aim to serve as a stimulant to distributors and dealers and promote the good of the industry in general. Theodore D. Pratt, executive secretary of the association, who is to direct the show, states that there are enough applications for space already on file to assure the financial success of the event.

The Automobile Dealers' Association, Inc., gave up its project because it could not get the backing of manufacturers, who through various associations had already shown their sentiment as against a truck show. It has been stated that 81 manufacturers or their representatives were heard from on the subject, of whom only 14 displayed a willingness to get behind the enterprise.

While carrying the trade mark of the Motor Truck Association the Truck and Tractor Exhibition Co. has been incorporated by Mr. Pratt to formally stage the show. It is understood that 55 truck dealers are members of the M. T. A., as well as 50 per cent. of the potential truck buying capacity of the city.

RECORD BY DUPLEX LIMITED.

Figures furnished by H. G. Pendell, Duplex truck distributor for Southern California, shows that a Duplex Limited truck recently hung up a new record for the trip from Los Angeles to Santa Barbara, negotiating the 118 miles in a thick fog at an average rate of 37½ miles per hour, the journey being made in three hours and nine minutes. During brief periods when the fog lifted a pace of 50 miles an hour was maintained. A little over eight gallons of gasoline were used, averaging 13 and a fraction miles to the gallon.

The truck carried 1741 copies of a Sunday newspaper, each weighing 1½ pounds. The load was therefore 3047 pounds.

TRAFFIC CHICAGO BRANCH.

The Traffic Motor Truck Corporation, St. Louis, Mo., has opened a Chicago branch with R. A. Hilstrom as manager. R. Rustenbeck, formerly chief accountant at the factory, will have charge of the office management of the new branch.

G. M. ACCEPTANCE CORP. IN TEXAS.

The General Motors Acceptance Corporation has arranged to open a branch office in Dallas, Texas.

NEW YORK READY FOR SNOW REMOVAL WITH 312 TRUCKS AND 150 TRACTORS

NEW YORK city is one of the hundreds of communities in the United States which is not going to be snow-bound this winter. Once was enough for the metropolis. As the result of its experience during February of this year, when traffic tie-ups due to unexpected blizzards cost the city \$5,500,000 and its merchants \$60,000,000, New York has girded itself for the battle against the elements this winter and naturally the weapons chosen for the combat are the truck and the tractor.

Already contracts have been awarded for 212 White five-ton trucks with dump bodies; 100 two-ton Mack trucks and 100 Cletracs. All these go to the department of street cleaning. The contract for 212 White trucks is said to be the largest order for motor equipment ever placed by a municipality. The work that these trucks, the 100 Macks, the 100 Cletracs and the other tractors to be bought will do will be the largest hauling work ever undertaken by any municipality in the world. The White trucks all have double reduction gear drive.

The city is also to purchase 50 tractors of larger size, there being at present a dispute between officials as to the choice between the Holt or the J. T., the two lowest bidders. While secured primarily for snow removal purposes the tractors will also be used for all street cleaning work, including removal of ashes and garbage.

The contract was awarded after a series of competitive tests in which the machines removed sand spread on the pavement to represent snow. Only crawler type tractors were invited to participate.

Of the five-ton trucks, 75 will be fitted with removable dump bodies and may be readily converted into flushers and sprinklers by the substitution of 1200-gallon tanks. The dump bodies will have a capacity for six cubic yards and all trucks will be equipped with special refuse collection bodies.

Tractors Proved Worth.

Although the Department of Street Cleaning did everything that could be expected last winter, its equipment was inadequate to handle the situation, and outside contractors were called in. These contractors failed the department at the critical time. Horse-drawn snow plows and motor trucks were powerless in the deep drifts. None of the equipment owned by the department, or available outside, was able to handle the heavy fall and packed snow, except a few small tank-type tractors which had been voluntarily offered for the work. These tractors were found equal to the task.

Street Tie-Ups Cost Money.

The Department of Street Cleaning has maintained in the past, and still does, an engineering bureau, which tries out and tests all kinds of street cleaning appliances. After the costly experi-

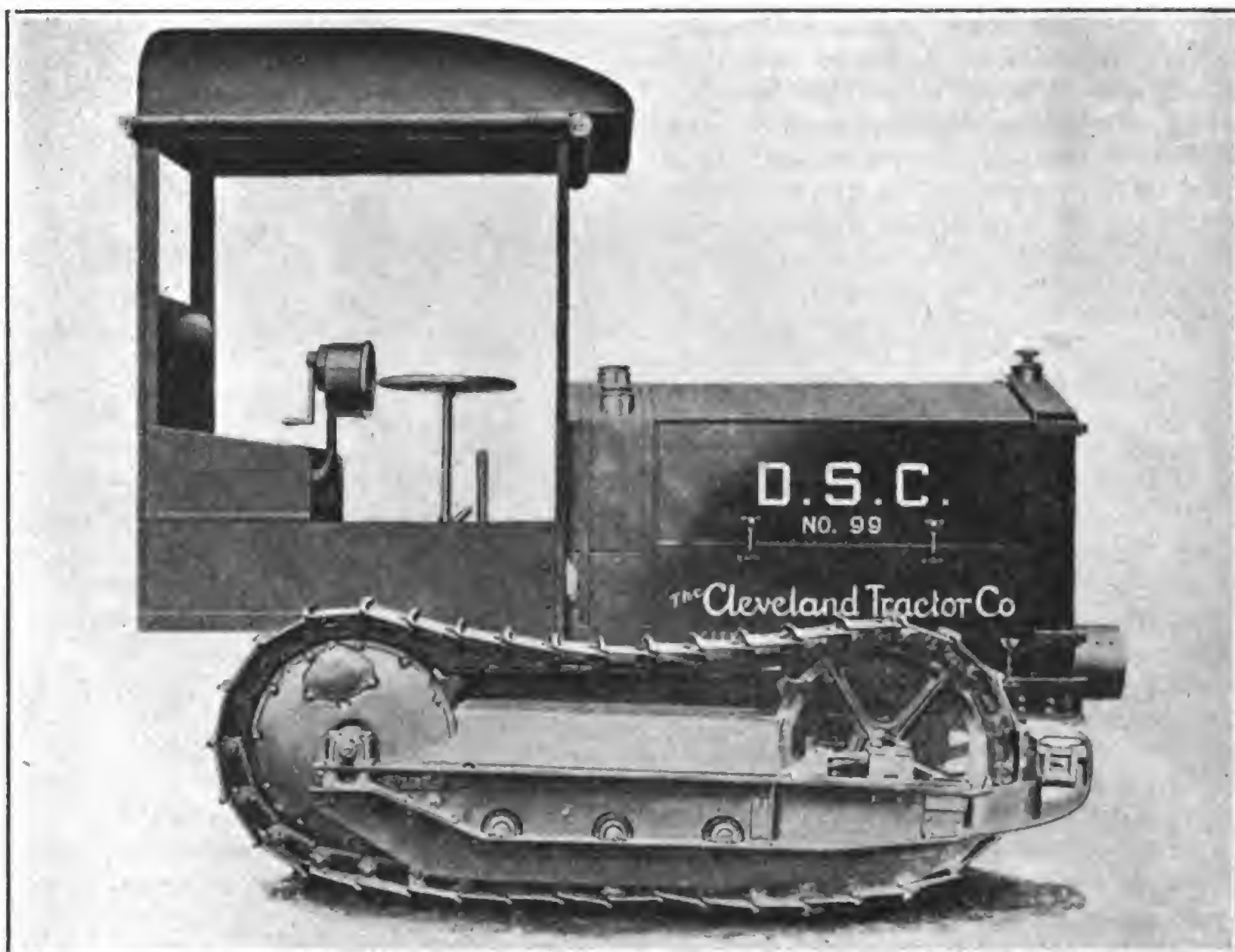
ence of last winter the city officials and business men of New York concluded that the city could not again afford to be snowed under and that special measures were necessary.

A snow-removal committee was appointed by Mayor John J. Hylan, with Fire Chief John Kenlon as chairman. This committee was to report to the Mayor on ways and means of handling the snow in the most efficient manner. Chief Kenlon, basing his plans upon successful fire fighting experience, decided that it was imperative to have motor equipment which could be kept at work throughout the storms so that it would be necessary to clean up but a small part of the snow when the storm was over.

Grover A. Whalen as chairman. Mr. Whalen is also chairman of the board of purchase and commissioner of the Department of Plants and Structures. This committee decided on the purchase of 100 small tank-type tractors, 50 large crawler type tractors and a big fleet of trucks with dump bodies, together with the necessary push plows for the tractors.

Covered Cab on Cletracs.

The order for 100 small tank-type tractors was awarded to the Cleveland Tractor Co., Cleveland, O., which will supply standard Cletrac tractors equipped with winter tracks, a covered cab, a two-man seat, storm curtains and sirens. These tractors will be painted the characteristic buff and red of the New York Street



One of the 100 Cletrac Tractors Which Has Been Bought with 50 Larger Machines and 312 Trucks by New York City to Remove Snow from Streets of the Metropolis.

Tests Held in July.

The snow-removal committee, working on this basis, organized a series of tests during the month of July. All manufacturers of track-laying tractors were requested to compete in this event, a committee having already decided that the track-laying type was best able to handle the snow under extreme blizzard conditions. Sand was spread thickly on the pavement in the place of snow and the tractors, equipped with push plows, were required to demonstrate their ability to work under "blizzard" conditions.

From the results of this demonstration and investigation the specifications for the machines were written. The committee on snow-removal having accomplished its purpose, it was superseded by a committee for the purchase of snow-removal equipment, headed by

Cleaning and Fire Departments. They will be delivered in December.

Last winter during the blizzard which not only tied up New York, but many other cities, with Cletrac tractors roads and streets were kept clear when all ordinary methods failed and no doubt there are many municipalities which are still using horse-drawn equipment on snow plows and scrapers which will follow New York's lead and install automotive equipment to remove snow. New York's decision was based upon good results in the worst conditions experienced in many years and upon severe tests which substantiated the service trials in every way.

Picked by Experts.

Still further support for the use of tank-type tractors and motor trucks for snow removal is found in the unqualified

indorsement by the members of the New York committee investigating and purchasing this equipment, among whom are such competent and experienced judges as A. B. McStay, Commissioner of the Department of Street Cleaning; A. A. Taylor, general superintendent of the department; John J. Condon, superintendent of snow removal, and Elmer C. Goodwin and Major Roberts of the city's engineering staff.

TRUCK HAULS \$1,000,000 LOADS.

Trucks which carry cargoes of textiles valued at \$50,000 and more are frequently reported, but they are all put in the shade by a truck in Detroit, and a $\frac{3}{4}$ -ton truck at that, which seldom carries a load worth less than \$1,000,000 and quite often bears a burden to the value of \$10,000,000. This seems impossible on the face of things, but is a fact, and hardly heeds the word of the Reo Truck News to prove.

The truck in question is a Reo Speedwagon, which does nothing else but haul money between the postoffice, the Federal Reserve bank and the member banks. The driver and eight other men guard this vehicle in all its jaunts. In a period of four months this Reo has averaged better than a million dollars a day for its load and has carried from \$7,000,000 to \$10,000,000 at times. Six iron trunks, each containing a mail bag in which are seven packages of money, comprise a load.

SNOW REMOVAL SURVEY.

J. L. Harrison, senior highway engineer of the Bureau of Public Roads, accompanied by K. A. Moore, assistant traffic manager of the N. A. C. C., spent the latter part of September and the early days of October in the Lake district and other congested points making a survey of snow removal requirements both from the standpoint of the drive-aways and from that of a general use of highways in winter. He met traffic managers of the automobile industry at Cleveland, Sept. 24, at Toledo the 25th, Indianapolis the 27th, Detroit the 28th and Milwaukee Oct. 2. The traffic managers presented data as to which roads are most important and which carry the heaviest burden of drive-aways. This information will be consolidated and tendered to state and county officials so that they may act accordingly.

SEPTEMBER SHIPMENTS.

Railroad conditions in general continue to show improvement. the latest report of the traffic department of the National Automobile Chamber of Commerce indicates. The accumulation of cars has dropped to about 43,000, which is practically normal, half of these being for export. The total loading of cars has been averaging nearly a million a week, which is a record figure. Shipments for September were about 20,000 car loads, 23,500 driveaways and 5340 boat. This is about the same as last September and about 80 per cent. of the August record.

MISS BUTTERFIELD, IDAHO GIRL WINS FIRESTONE ESSAY CONTEST

A girl, a 16-year-old miss, Katherine Flournoy Butterfield by name, her habitat, Weiser, Ida., carries off the Harvey S. Firestone university scholarship in the Ship-by-Truck Good Roads essay contest against nearly a quarter of a million other school pupils of the nation.

Miss Butterfield wrote a classic and well deserves the award. She knows just what she is going to do and her plans must excite the envy of the young ladies who tried so hard, but just fell short of what Miss Butterfield achieved. The Idaho girl has chosen to spend a year at a well known girls' school on the Hudson, near New York city, and will then enter an eastern university for a three-year course.

Miss Butterfield went at the highway



Miss Katherine F. Butterfield, Weiser, Ida.,
Winner of Firestone Ship-by-Truck Prize
Essay

transportation problem as though it were a simple task and she told a story in her 500 words that might well be the work of a professional essayist. In condensed form she made an argument for the truck as an agency in distribution which has seldom been so well put in any writing. She knew what she was talking about and wasted no words in getting to the root of things.

Seldom has an event of this nature attracted such nation wide attention. Newspapers and magazines, motor organizations and automotive associations took up the project and created new interest by press agenting the contest and by offering additional local prizes. Nearly a quarter of a million young people who, in the adult stage of life, will wrestle with the subject of transportation, were given an early insight into the field and it is anticipated that the foundation of knowledge built in this way will be added to until these young people will know just what to do when their day dawns.

The more than 200,000 essays were winnowed down until but one from each state was placed before the final judges for decision. Members of the committee which made the awards of national prizes were Dr. C. D. Jarvis, United States Bureau of Education, chairman; Dr. Walton C. John, United States Bureau of Education; H. S. Fairbanks, United States Bureau of Public Roads, and Pyke Johnson, secretary of the highways committee of the National Automobile Chamber of Commerce.

Miss Butterfield is not without honor in her own home. During the war she won first prize for the best Liberty Loan essay and wrote a play which was produced—with the aid of 20 cousins—upon the return of her brother from the battlefields of France.

IMPORTS AND EXPORTS.

America's import trade is expanding at a more rapid pace than is its export trade. Detailed figures made public late in September by the Department of Commerce show that imports for the first eight months of this calendar year exceeded those of the 12 months of 1919 by approximately \$100,000,000. Imports in 1919 established a new high record.

On the other hand, exports for the eight months' period ending with August were \$2,437,171,869 less than those in the 12 months of 1919, and were only \$211,000,000 greater than the exports for the first eight months of last year. The total of exports for the eight months was \$5,483,254,121.

The total of imports for the eight months was \$4,000,627,445, as compared with \$2,261,550,440 for the corresponding period in 1919. The excess of exports over imports for the eight months of this year was \$1,483,000,000, which represents the trade balance in favor of the United States. The trade balance for the first eight months of 1919 exceeded \$3,000,000,000.

TO KILL "TRADE-IN" EVIL.

The Motor Truck Association of Philadelphia has almost reached the organization stage with a project to form a bureau or exchange for trucks taken by dealers in "trade-in" propositions. It is alleged that dealers sustain losses at the present time through allowing extra value for trade-in trucks with the idea of heading off their competitors. The plan proposes to eradicate this practise.

Charles M. Lahm, sales manager for the newly formed United Motors, Inc., which handles Sanford and Fulton trucks in the territory, launched the campaign which has met with hearty indorsement among members to date.

INDIA SEEKS WATERING CAR.

Karachi, India, is in the market for a motor watering car for use on its streets which are at present watered by bullock carts. British models have not met the requirements and further inquiries are being made before the order is given.

COOPERATIVELY OWNED TRUCKS TO TAKE PLACE OF MILK TRAINS

MILK producers all over the United States must on a near day solve the problem of getting their product to market, the issue arising through the gradual cutting off of short railroad and trolley express lines.

These non-paying propositions are being eliminated one by one and the day is just around the corner when there will not be a short line of either the steam or trolley type from one end of Uncle Sam's domain to the other.

Motor trucks have been the key of the riddle every place the question has cropped up to date and motor trucks will continue to be the answer wherever judgment and good business sense hold sway.

There is a disposition on the part of the government to handle this matter through its parcels post system, employing former war department trucks on the job, but so many changes must be made before the difficulties can be ironed out that there is little chance that this result is to be achieved in our day. If special parcels post rates were made for the milk producers, as would be necessary, the cry of class discrimination would be made and other branches of endeavor would be quickly on the backs of the government for similar boons.

Most of the trucks now engaged in hauling milk from the country to the city are hired. Later they will be co-operatively owned.

The natural goal of the farming folk is direct selling by the producer to the consumer. This means that the middleman, who gets the cream of this business in the shape of profits, will be eliminated as a selling factor. The farmer, who now works overtime for a scanty livelihood, will get what is his in the shape of an adequate return for his investment and labor, while the consumer, who now rails at the farmer, the government and everybody within range over the high cost of human fodder, will be able to buy foodstuffs at a price that will not clean out his pocketbook, lining and all.

When this happy day dawns, and its on the horizon, the motor truck will be the power that will clinch the contract. There will be a parade of trucks through every hamlet and settlement. They will criss-cross the country roads in a network of wheels. The only agency that can directly connect the producer and the consumer is the truck. And when the day of direct selling between the farmer and the consumer arrives they won't be hired trucks either.

Can Work Out Own Destiny.

A consummation devoutly to be wished would be for the farmer to see all this now and put his shoulder behind the good roads movement the country over, knowing that he, rather than the rich motorist, will be the big gainer in that future and early day.

What applies to milk, of course, hits all farm products. Everywhere the man who tills the soil is longing for an era when he will get a fair share of the revenue his produce brings. He knows that the middleman is getting it all now and that the said middleman must be eradicated and completely wiped off the map before he can come into his own.

Milk is handled less than most farm produce. This fluid usually goes from the farmer to the dealer, to the retailer and to the consumer. Often the dealer delivers it direct, cutting out the retailer.

At the same time the by-products of milk—butter, cheese and cream—often get many handlings. For instance, one dairy concern which operates in many sections of New England, operating on such a big scale that it has receiving stations, with many trucks to collect and deliver its milk, which goes to wholesalers, retailers and private families,

time and was accomplished through the intelligence of the dealers who saw that it would benefit them by bringing a uniform rate instead of the former hap-hazard method whereby the price varied several cents in the same city.

This was caused by the fact that the dealer who was most skilled in David Harum methods often got his milk at a less price than the one who paid what the farmer asked. Some also got their milk into the city cheaper than others, the methods of transportation and the distance varying.

The dealers now have receiving stations and also, in many cases, control the transportation of milk. They also own the cans, on which they make a profit. Sometimes they have leased a trolley car or a freight car and made a profit on it at the expense of the farmer.

Dealer Belongs in City.

The producers are now fighting for the



Federal Two-Ton Truck Bought by George A. Holley, Wakefield, R. I., to Haul Milk to Providence, to Continue Delivery After Discontinuance of the Sea View Trolley Railroad Service.

sells its butter, cheese and cream to jobbers, from whom these by-products go to the wholesaler, thence to the retailer and finally to the consumer.

Eradicating the Middleman.

The Turner Center Creamery, 16 Terminal way, Providence, R. I., is one institution which has disposed of the middleman, not only for milk distribution, but also in the vending of eggs, butter, cheese, cream and other farm products of this character. This concern is owned by farmers who bring in their goods to the Providence headquarters. The various articles are then sold direct to the consumer and delivered by a fleet of motor trucks.

The milk producers are now engaged in a running battle which is regarded as the first step toward ultimate producer-consumer dealing. They want the dealer to stay in the city and leave the country to them. The farmers have won the first skirmish by securing an agreement whereby the price of milk is fixed at a city delivered rate. This victory took

principle of controlling the delivery of milk, of owning the receiving stations and the cans. In other words, they feel that the dealer should have no interest in the proceedings until the milk is delivered to him. They see no reason why he should come out in the country and make a profit on them through his ownership of cans or his leasing of a freight or trolley car. They are against the policy of one dealer controlling the only transportation route in one section so that the producers in that district must sell to that dealer, or not at all.

They argue that there is justice, economy and convenience in their plan. Take the case of cans. It now takes seven cans to move one. This includes one going and one coming from the city, with one or more at the receiving station, several on the farm, etc. Not owning the cans and paying an excessive rate for them the farmers naturally do not take good care of them. When they are thrown off a car into a ditch there is apt to be one or more missing. Some

farmers do not mind punching a dent in a 10-quart can that will cut its capacity to 9½ quarts.

The farmers claim that if they owned this property they could cut the number of cans necessary for the moving of one from seven to five, which would be considerable saving. One big dairy concern makes about 25 per cent. on its investment in cans and it is probable that this is a fair sample of how the farmer loses when the dealer owns the cans.

One convenience that the farmer producer would have by controlling transportation would be the right to say when, where and at what time the truck or other haulage agency would stop in making collections. This service would entirely belong to the farmer and he could get many benefits from it he does not now enjoy.

Cooperatively Owned Trucks.

Under the present circumstances when the producers in a certain section find that it is up to them to deliver their own milk to the market they hire trucks. Should they own their own receiving stations, their own cans and be in complete charge of shipping, it is agreed that there would at once be a call for cooperatively owned trucks.

Milk producers of northern Connecticut and southern Rhode Island who formerly sent their product over the Danielson and Sea View trolley lines to Providence faced the problem of getting their supply to the Rhode Island capital when the freight and express service on these lines was discontinued on Sept. 1. Naturally both districts turned to the motor truck.

Three Truck Routes.

Three trucks are now engaged in this work, one coming from East Killingly, 32 miles from Providence, one from Wakefield, R. I., 34 miles away, and the third from Foster Center, R. I., 20 miles from the city. They carry a total of nearly 600 cans, each containing 10 quarts, or 6000 quarts in all. Their daily mileage is 64, 68 and 40 miles respectively. Naturally these hauls are outside the province of the horse.

George E. Holley makes the run from Wakefield with a two-ton pneumatic-tired Federal truck, which he bought for the purpose following an agreement by the producers in his section that they would send their product by his truck for a period of three months, whether or not service is resumed on the trolley lines. He is at present hauling 230 cans a day at 15 cents per can, which nets him \$34.50. In addition to the empty cans he usually has a return load of grain, groceries and meat for the farmers in his neighborhood. This truck is equipped with a van body, a top being desirable in this brand of transportation. There are shelves for the storing of the cans.

Hauls for 30 Producers.

Mr. Holley collects from about 30 producers, all of whom have platforms or are building the same for holding the cans until they are loaded on the truck and for receiving them on the truck's return. He leaves Wakefield about 7:30 and reaches the city line at Park avenue about 10:30, where three or four of the

seven dealers to whom he delivers meet him and get enough of the fluid to supply their immediate delivery needs. He has unloaded at his seven stopping places before 12 o'clock. Of the charge of 15 cents per can the producer pays 10 and the dealer five cents.

A can of milk weighs 27 pounds and in hauling 230 Mr. Holley therefore has a load of 6210 pounds, more than three tons, on his two-ton Federal. The distance traveled in making collections and deliveries is better than 70 miles. There are about 40 stops. Ten gallons of gasoline and two quarts of oil are used daily.

Mr. Holley also has a 1½-ton Federal, a ¾-ton International, a three-ton Chase and two ¾-ton Chases, which he utilizes in the ice business. All but the big Chase are pneumatic shod. It is possible that at a later date he may put a second truck in the milk hauling service, a number of producers along a slightly different route not being able to get their supply to the city at present.

Operating Plan Is Tentative Yet.

The general operating plan may be changed somewhat to meet conditions that may develop. The truck makes a straightaway haul, picking up at the roadside stations, and all milk is left at these by farmers and all freight brought from the city is delivered with the cans at the stations. From these the farmers do their own hauling, but the only change from the trolley service is from the railroad platforms to the main highways, there being but little variance in distance.

With truck freighting a considerable volume could be delivered direct to the farm, although no provision has thus far been made to do this. Later on there is probability that the service will be perfected to serve all the people along the route, but now only the haulage of milk is undertaken on the inward trips, and the outward loads are limited by the number of empty cans carried.

There is seemingly reason to believe that a considerable volume of freight could be regularly hauled in either direction, and during the spring and summer months shipments of various products of the farm would appear to be entirely logical. And what has been stated applies equally well to other truck services inaugurated primarily to haul milk considerable distance.

Other Milk Haulage Routes.

The farmers on the East Killingly and Foster Center routes pay 7½ cents of the 10 cents per can that is now being expended for trucking the product to Providence, the dealer paying the balance. The farmers in the Wakefield section are paying 2½ cents more per can and are therefore getting a quarter of a cent per quart less for milk than those on the other routes.

Truck Service Satisfactory.

The service on all routes has proven satisfactory to date to both farmer and dealer. The latter are saved the cost of sending trucks to the railway terminal and the farmers are also saved extra hauling. The milk has arrived in Providence in splendid condition. The truck-

ing service right now is more costly than was trolley transportation, but has greater convenience to recommend it. In these particular sections, however, there are few that would not desire a return of the trolley express because of the general freight service.

Among those who feel that the parcel post system may yet solve the haulage problem for the milk producer is Postmaster Edward F. Carroll of Providence. Mr. Carroll feels that some special system of motor vehicle routes might be established, using war department trucks to get milk to market from sections not served by trolley or railroad freight lines.

The Parcels Post Survey.

Postmaster Carroll thinks so well of the project that he submitted his views to the Postoffice Department at Washington and by order of Fourth Assistant Postmaster General James A. Blakslee, Herbert F. French, chief clerk of the New England railway mail division, is now making a survey of the situation and will present an early report of his findings to Washington.

Fred C. Warner, southern district manager for the New England Milk Producers' association, whose territory embraces Connecticut, Rhode Island and a part of southern Massachusetts, sees little hope for the producer from the parcels post system. He calls attention to the fact that this system is operated on zone lines and that it costs as much to ship 50 miles as five. He shows the cost of sending a can of milk from northern Connecticut, which is 10 cents by truck, to be 40 cents by parcels post.

This latter is supposed to include delivery but, patently, the postoffice authorities cannot deliver to the consumer, and the dealer is not anxious to pay twice for the same service. A quart of milk by bottle would cost six cents to ship from nearby Connecticut points.

How the postal officials are going to bridge the difference in cost and overcome the other handicaps so that an attractive service may be offered the milk producer is beyond the ken of Mr. Warner, as it is outside the insight of any person who has delved into the milk transportation problem.

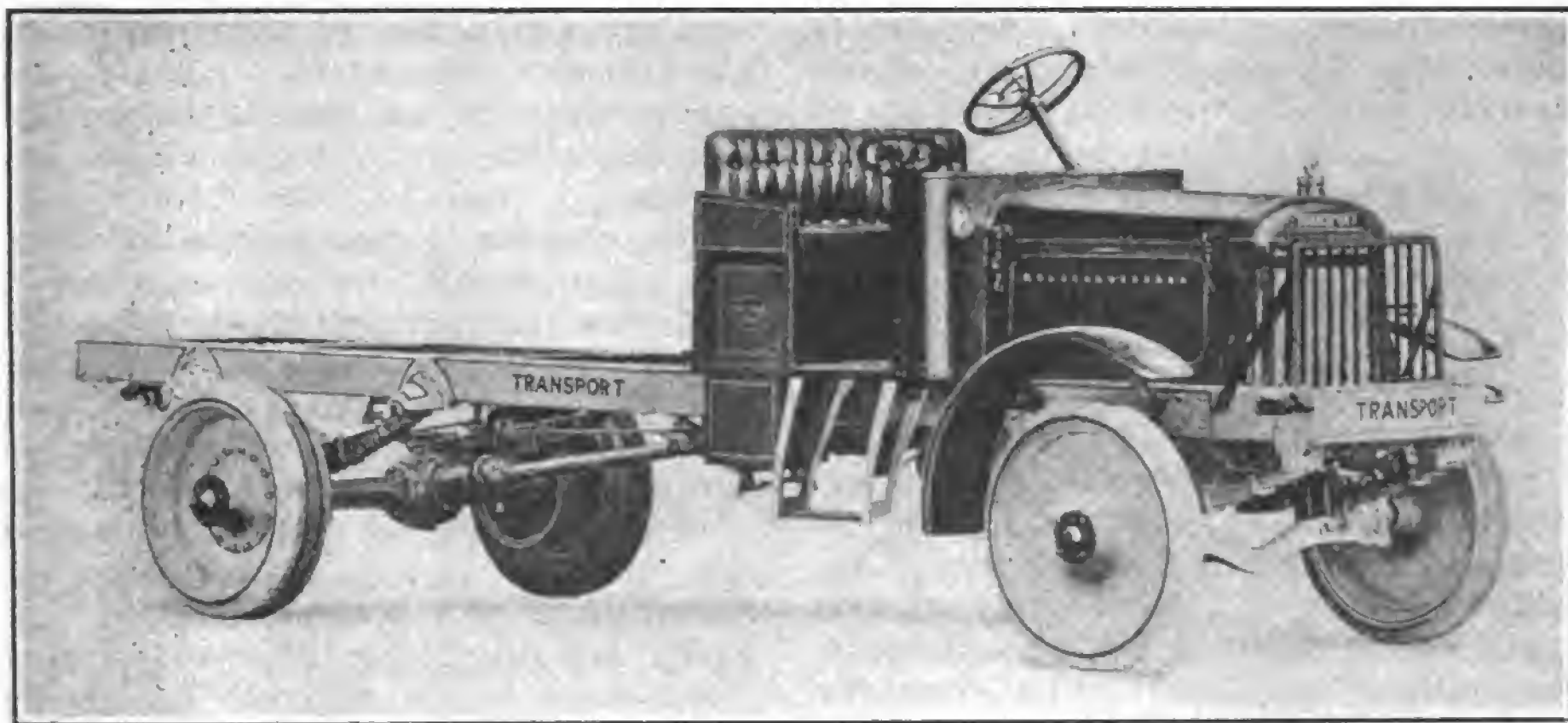
The farmer would be the first, however, to give three lusty hurrahs for the government or the individual who would show him a way to get his milk to market more economically. Motor trucks, owned or hired, the former preferred, is the best the producer has seen to date and they'll have to travel some to go it one better.

\$40,000,000 FOR VIRGINIA ROADS.

Virginia is to vote Nov. 2 on an amendment to the state constitution allowing the sale of state bonds for road building. An issue of \$40,000,000 for this purpose is proposed.

The Motor Truck Engineering Co., Indianapolis, Ind., will make a specialty of designing and building motor trucks for the individual requirements of the customer. Robert DeSchaum is manager.

TRANSPORT MODEL 70 3½-TON TRUCK



The Complete Chassis of the Transport Model 70 3½-Ton Truck, Internal Gear Driven, Ready for Installation of Body and Cab.

ENGINEERING experience is reflected in model 70, the latest and the largest size of the series produced by the Transport Truck Co., at Mount Pleasant, Mich., the design for which was recently determined. The claim is made that the chassis has been carefully perfected and that the machine as built represents the fullest degree of industrial progression.

In a general sense the design is conventional and conforms to standard practice. In it are incorporated the same makes of construction units used for building the other sizes, but the factors of safety are exceptionally high and the details of assembly have been developed with much care so that service life will be prolonged and maintenance cost will be minimized.

The company maintains that the operating expense with this chassis will be very low with normal attention, and because of simplification of construction the necessary adjustments and repair work can be done with minimum loss of service time. Maximum strength has been obtained by the use of superior materials and the proportioning of parts, this affording a balance in construction that is especially desirable, and all parts in moving contact have been enclosed and thoroughly lubricated. Because of the tendency to narrow the tread of heavy duty trucks to obtain street and garage economy, a factor that is now given increasing attention, the tread of this chassis has been fixed at 64 inches, which is a saving of nearly three inches as compared with the average of 10 other makes of trucks of the same capacity.

Standard Construction Units.

The construction units are practically those that are used for the other Transport chassis, and include Continental engines, Duplex governors, Stromberg carburetors, Eisemann magnetos, Spirex radiators, Fuller multiple dry disc clutches, Fuller transmission gearsets, Hartford universal joints, Clark internal gear driven rear axles, Detroit pressed steel frames, Detroit springs, Clark steel disc wheels, Jacox steering gears, Alemite systems of chassis lubrication.

The results obtained with internal gear axles have been exceedingly satisfactory and the experience of President M. A. Holmes and his associates includes thousands of machines built before the Transport company was organized. Every construction unit has been proven by long service and is recognized the world over as having the approval of the leading automotive engineers, and the mechanical endurance of the chassis is further insured by the liberal use of nickel steel in the rear axle and its spindles, the front axle spindles, transmission gearset gears and shafts, differential gearset gears, jackshaft, driving shafts, internal pinions, spring bolts and other parts where maximum strength is necessary.

All the parts in frictional contact have unusually large areas to minimize wear, and the moving parts are fully enclosed and are carefully lubricated. Much care has been taken to obtain accessibility to insure the fullest degree of attention with minimum labor, for there is realization that the time required for adjust-

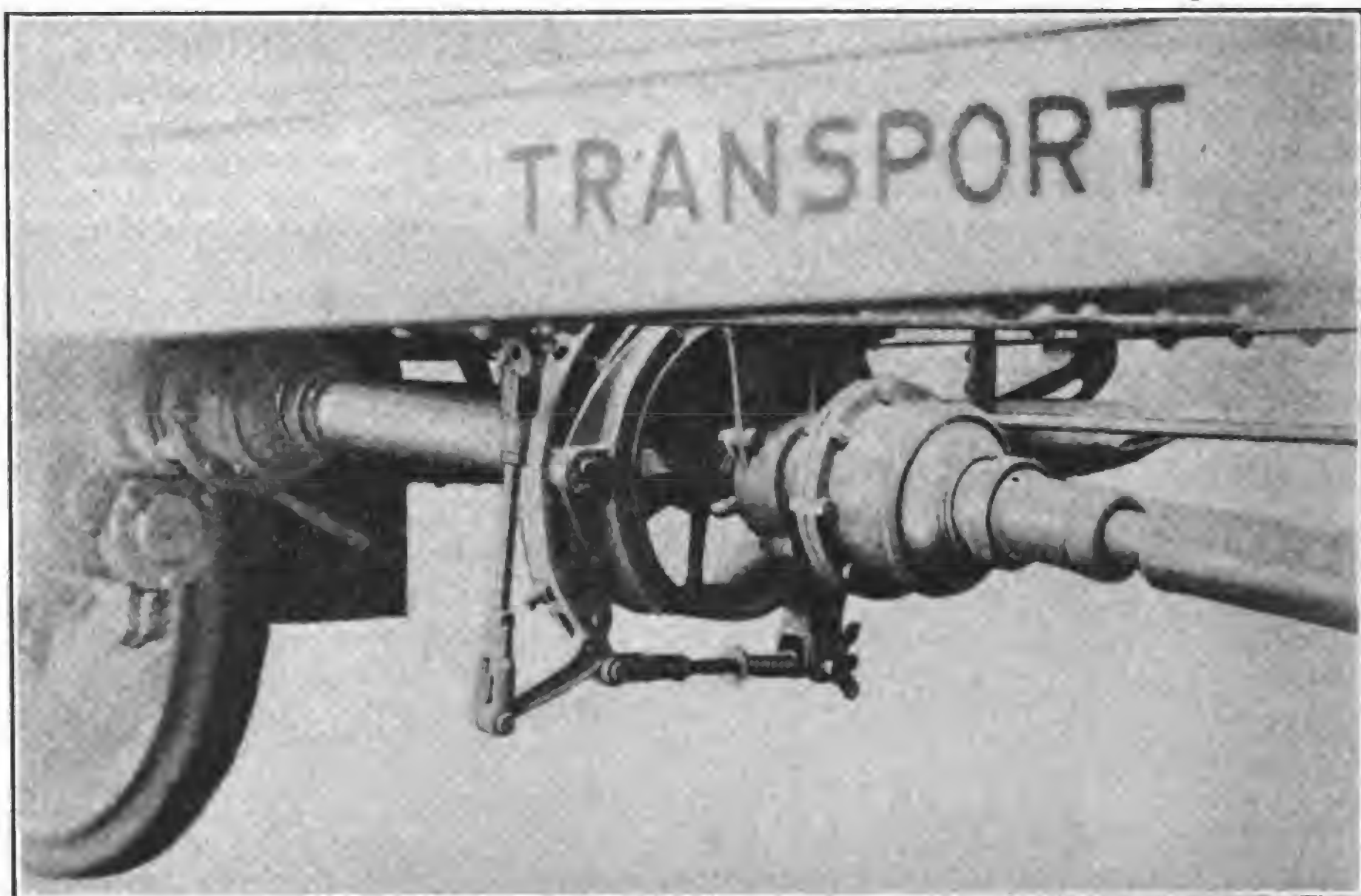
ment and repair is very important and has large bearing on the actual productivity of a power vehicle.

Truck Type Continental Engine.

The engine is the latest production of the Continental company and is a heavy duty type with standard No. 2 S. A. E. starting motor and generator flanges, so that electrical lighting and starting equipment may be installed whenever desired by purchasers. The engine is a four-cylinder construction, cooled by a circulation of water through the cylinder jacket and the Spirex radiator, driven by a centrifugal pump, with radiation promoted by a belt driven fan.

The engine is lubricated by a force feed system that delivers oil to the bearings, and the other moving parts are supplied with the lubricant thrown off by the centrifugal movement of the crankshaft. The engine is governed by a Duplex governor, the fuel is supplied through a Stromberg carburetor, and the source of the ignition current is an Eisemann high-tension magneto. The intake and exhaust manifold is cast integral so that the fuel gas is dried and preheated, this affording the largest degree of engine efficiency from a given volume of gasoline, and insures a substantial measure of fuel economy, which minimizes the operating cost.

The engine is combined with a multiple dry disc clutch and a selective sliding gear transmission gearset in a unit power plant that is suspended at three points—at the forward end by a trunnion and at the rear by arms mounted on the frame side members. The clutch is claimed to be self-compensating and requires practically no attention. The gearset has four forward speed ratios and reverse. The shafts and gears are large and of chrome nickel steel and as the gears are always in mesh they cannot be stripped and there is a minimum of me-



The Service Brake of the Transport Model 70 Truck, a Toggle-Actuated Type with Contracting Shoes, at the Rear End of the Forward Section of the Driving Shaft.

chanical stresses upon the power transmission when shifting gears.

The Power Transmission System.

The driving shaft is a two-section type fitted with three universal joints, the after end of the forward section being mounted in a self-aligning bearing carried in a bracket on a frame cross member, and the shaft is coupled to the pinion shaft of the rear axle. The load is carried by the I section dead axle and the power is transmitted by the jackshaft and the spur pinions to the internal gears mounted on the rear wheels. The pinions and gears are enclosed and protected from dust and water and they are lubricated by grease that need be renewed only at long intervals. The differential gearset and the jack shaft bearings are lubricated by a bath of oil contained in the jackshaft housing. The front axle is an I section steel drop forging with heavy knuckles.

The frame is pressed steel channel section of unusual depth that is strongly reinforced with cross members and gusset plates, and it is stiffened by exceptionally wide webs. The frame is suspended

on long semi-elliptic springs. The springs are lubricated by magazines from which the oil, replenished at intervals, is supplied by wicks by capillary action and is thoroughly distributed over the entire bearing surface of each spring leaf, as well as lubricating the bolts. One filling of the magazines lasts from 10 days to two weeks. All the spring eyes are bushed and the bolts are hardened and ground.

Steering Gear and Other Details.

The steering gear is constructed with large wearing surfaces and it is adjustable for wear. It is located at the left side of the chassis and the linkage is unusually heavy. The control is conventional and there are two brakes, the service brake being a contracting shoe type with a drum on the rear end of the forward section of the driving shaft, the shoe being suspended from a heavy bracket, the two halves being toggled so as to obtain uniform clamping contact. Claim is made that this brake is simple, very strong, extremely accessible, and it can be easily relined or ad-

justed, while it is removed from danger of dust and grease and accumulations and immune from freezing. These qualities are maintained to make the brake exceptionally dependable. The emergency brake is an internal expanding type operating within drums on the rear wheels.

The chassis is equipped with Clark disc steel wheels, and the rear set is shod with 10-inch Giant tires. There are no oil cups on the chassis. All parts aside from the engine, clutch, transmission gearset, rear axle jackshaft and springs are lubricated by the Alemite system, including the rear axle bearings, the universal joints, wheel bearings, steering gear, fan, brake and radius rods, which are fitted with nipples to which the Alemite grease gun may be coupled and grease may be forced under 500 pounds pressure to all bearings and joints.

The chassis is sold with the standard equipment of driver's seat, front fenders, running boards, oil dash and tail lamps, radiator guard, folding starting crank, jack, tool kit, etc.

TO BOOM FOREIGN TRADE.

Lower tariff schedules on American cars and new commercial treaty agreements were advocated at the Export Managers' convention of the National Automobile Chamber of Commerce at New York city this month. It was decided to offer resolutions to Congress covering these views.

While the export of cars and trucks has been constantly on the increase since the armistice, it is anticipated that the proposed steps will serve still further to promote foreign trade. It is realized that export business cannot be expanded unless imports are promoted. Automotive products exported the last fiscal year totaled more than \$224,000,000, including 129,875 cars and trucks shipped to 81 countries.

Among the speakers were T. S. Barber, representative of the General Motors Export Co., who declared that South Africa is rapidly becoming a strong market for American motor trade.

TRUCK DEALER TO HANDLE CARS.

The Schmidt Motor Co., Milwaukee, which distributes Clydesdale trucks, will also handle the Sayers Six.

FORD BUILDING PLYMOUTH, MICH., DAM WITH FLEET OF ACME TRUCKS

All the heavy duty hauling at the big dam building project which the Ford Motor Co., Detroit, has under way at Plymouth, Mich., is being done with a fleet of six five-ton Acme trucks owned by Contractor A. L. Kaufman. The power generated by this dam is to run the nut and bolt factories of the Ford company.

The Acme trucks have shown unusual efficiency and absolute dependability upon this job where such qualities are vital. What is required of a motor truck on a modern construction job of this nature is shown in the accompanying illustrations. The trucks are pictured hauling 7½ tons of stone, a 50 per cent. overload, up a 15 per cent. grade to the dam. A truck backing into a trestle and dumping its load of cobble stones into the river is pictured. Materials of

all kinds have been hauled in bulk to the job by these power haulers.

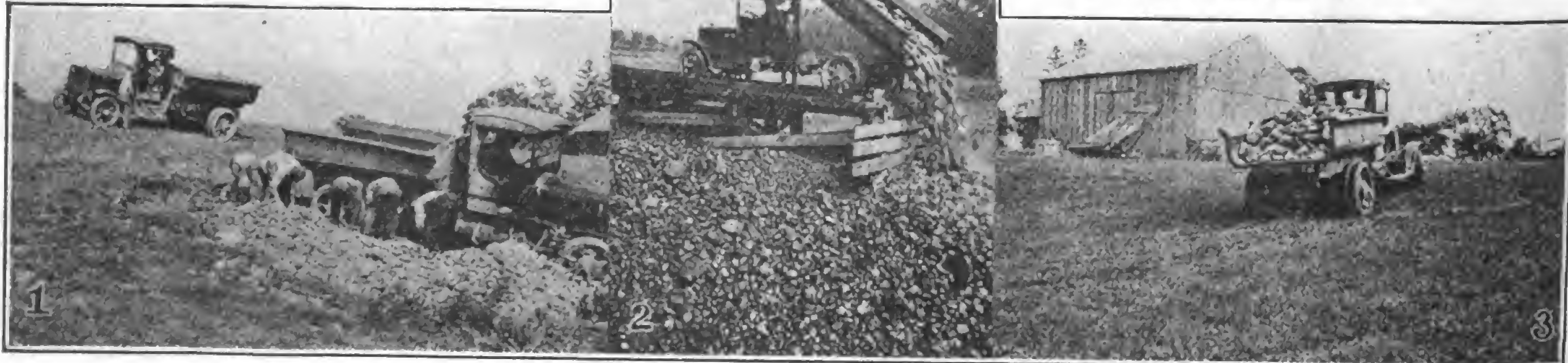
Trucks have long since passed the experimental stage and have taken their place in the construction field along side the steam shovel and other labor and time saving appliances.

PATRIOT PERFORMANCE.

"Patriot Performance, the latest printed output of the Patriot Motor Co., Lincoln, Neb., is one of the neatest publications issued recently to enlighten the public on power transportation. The three popular models of the company, the Lincoln, Revere and Washington, are reproduced in colors. There are pictures of Patriot trucks in action at all points of the compass, while letters from users everywhere tell of the satisfaction that these trucks are giving owners.

GMC ADDITION OPERATING.

Additions to the plant of the General Motors Truck Co., Pontiac, Mich., are in partial operation and it is confidently anticipated that the new factory will be running on capacity schedule by the end of the year. The outlay for the new addition is about \$1,500,000.



Building Operations at New Dam of the Ford Motor Co. at Plymouth, Mich.: At Left, Hauling 50 Per Cent. Overload Up a 15 Per Cent. Grade; Center, Dumping Load of Stone at Dam; at Right, 7½-Ton Load on a Five-Ton Truck.

NEW ANGLES OF OLD SUBJECTS

ROAD CONTRACTOR USES PORTABLE MOTOR TRUCK TURNTABLE.

A portable motor truck turntable has developed wonderful utility for the Henry W. Horst Co., Rock Island, Ill., which is engaged in improving a section of the National Old Trails, crossing Illinois from Terra Haute, Ind., to East St. Louis, Ill.

The turntable is set on the subgrade from 75 to 100 feet in advance of point where the trucks dump their loads of mixed concrete so that the trucks may be turned around without cutting up the subgrade. It rests on two three by 12-inch planks shod with iron strips on the bottom, which serve as skids. These planks are parallel to the center line of the highway. The planks support a 10-foot diameter circular track made up of a four-inch I beam. Two eight-inch steel channels 13 feet in length are framed together with three by three-inch angle irons and steel gusset plates and from a track for the truck wheels to stand on while being turned. These eight-inch channels are each bolted to two small carriages built up of three by three-inch steel angles with two wheels to the carriage. The wheels have a four-inch face between the flanges, are three inches in diameter for the bearing surface and six in diameter for the flanges, and ride on a one-inch axle.

The eight-inch channels which carried the trucks were somewhat too light for the purpose and one of them was slightly bent, making the turntable hard to operate. A heavier channel would have avoided this.

The turntable is dragged ahead when the progress of the work requires either by a team or by a Fordson tractor, which is part of the grading equipment.

HAVE A HEART, TRUCKMAN!

A truck driver recently crashed his car against a magnificent elm tree at Wellesley Hills, Mass., which caused a sympathetic poet to pin on the tree the following bright effusion:

O, truckman,
Spare this tree;
Have a heart
And don't butt me.
The street is narrow,
But the world is wide;
Try to back
On the other side.

BAY STATE TRUCK CLUB BUSY.

The Motor Truck Club of Massachusetts, formed last fall, resumed its meetings for the winter this month and promises to be an active organization. It will play a prominent part in the fight against legislation adverse to the industry before the Legislature in the spring. Plans are under way to increase the membership.

NEW COMMERCE MERCANTILE EXPRESS TRUCK UNDER PRE-WAR PRICES

The Commerce Motor Car Co., Detroit, Mich., has been besieged with orders following a telegraphic announcement to dealers of the addition to its line of light motor trucks of the Mercantile Express, which will be delivered completely equipped, and is designed to be one of the finest and fastest trucks operating and one of the lowest, if not the lowest, in price of its class. It will have a chassis list price of \$1350 and correspondingly low prices on three types of bodies, open express, platform with convertible stake or open express with canopy top.

The new 1921 model will have a maximum speed of 40 miles an hour, be equipped with electric starter, electric lights, a magneto and all of the most modern improvements to make it the leader in its class. It will have an economical pay load capacity of 1500-2500 pounds. The color scheme adopted is particularly attractive. Lafayette grey with carmine striping chassis, St. Mihiel brown with black and gold striped bodies with the same brown on the radiator and dash with gold striping.

Power is furnished by a 3½-inch bore by five-inch stroke Continental (Red Seal) motor transmitted to the bevel gear truck type Salisbury rear axle by a Spicer tubular propeller shaft using two Spicer universal joints. The transmission is in unit with the motor, manufactured by the Detroit Gear Co., and is of the truck type. The clutch is cone type, 14 inches in diameter. Brakes are 16 inches in diameter. The wooden artillery wheels will mount 34x4½-inch Goodyear non-skid pneumatic cord tires on both front and rear wheels. Springs are manufactured by the Detroit Steel Products Co., eight leaf front, 10 leaf rear. Steering gear Jacox. Carburetor Zenith with Stewart vacuum feed. Gasoline tank 15 gallons capacity under front seat. Cooling system thermo syphon

with cast tank radiator, same as pioneered in truck industry by Commerce, capacity four gallons.

LOW UPKEEP COST FOR HEAVY DUTY TRUCK.

Statement is made by the Federal Motor Truck Co. of a truck that has been used with remarkably low upkeep expense, this result obtaining from careful attention. The truck was bought five years ago by the Durrett Flour & Grain Co., and as this was the first machine, and the company had been convinced of the value of record, very careful accounting of the operating cost was made. The truck was well maintained, so well, in fact, that at the end of three years when thorough examination and complete restoration was made the cost for parts for repair was slightly less than \$7.

The unusual and no doubt unexpected economy was such that the company decided to increase its truck equipment, and this was done and Federal machines were decided on for standardization.

GOOD ROADS MEET IN WEST.

A special committee of the motor truck committee of the National Automobile Chamber of Commerce, Inc., headed by George M. Graham, is planning a "Protect the Highways" convention in a city to be selected in the Middle West on Dec. 10. The meeting is intended to show that the automotive industry is back of all legitimate movements for the improvement and protection of highways and also to educate the public to the value of good roads.

PINTLE HOOKS ON TRUCKS.

Two long established motor truck manufacturers now fit all their trucks with pintle hooks for towing trailers as standard equipment. This action has been taken because of the recognized utility of the trailer in the oil fields of Texas and Oklahoma. Distribution of the load makes it possible to haul surprising weights of oil field materials.



A Five-Ton Federal Truck Operated by the Durrett Flour & Grain Co., Which Was So Economical the Company Standardized Its Equipment with This Make.

Truck Industry Hit by Attack on H. C. L. by People

Ten Concerns Reduce Prices, 11 Announce No Change, and Three Guarantee Them to Stated Dates, But No General Break in Market Values.

"ALL aboard that's going aboard!" Last call for manufacturers of motor trucks to stand up and be counted on the question of price reduction.

Since Henry Ford threw a monkey wrench into the works the industry has been at sixes and sevens. What to do! What to do!

Scores of manufacturers have been heard from and it is generally taken for granted that those who have not made an announcement to date are going to maintain present prices if this course can be consistently pursued.

Manufacturers are a unit in declaring that any cut in prices means a loss. It may not bring a straightaway loss, but when interest on investment, cost of production and distribution and other overhead is considered the manufacturer is conducting his business for the benefit of the consumer and not to his advantage. Business is business and when it is not run at a reasonable profit it is not business.

There has been no drop in wages nor is there likely to be for a considerable period. We are here to say that there will be, however, before all is right with that part of the world between the Gulf stream and the Canadian line.

Parts and materials show no signs of a decline. Steel stays up. The reduction in lumber costs is almost negligible. Rents are where they were a few weeks ago. All the costs that enter into the operation of truck factories cling to the old stand.

The manufacturer who cuts the price of his product has no reason for doing so except that the buying public expects him to take this action following the wholesale slashing which H. Ford perpetrated on his products. Without economic laws of any kind to guide him he feels that he must cut prices to get business.

Some do not feel that way. They know that to do business in a business way they must get present prices. Even the layman knows that truck prices have not followed the upward pace of wages and commodities in the past few years.

What Henry Ford Started.

The meat of the matter is that some industry had to be a party in the cause of bringing the high cost of living down to a normal level. Henry Ford decided that it should be the automobile industry. His lead was followed by several passenger car manufacturers. Then

gradually the truck manufacturer was drawn into the vortex.

Why should the automobile industry, the last to go up—and never all the way up—be the first to go down?

There is no reason for it, of course, except that Mr. Ford took the bull by the horns and started the avalanche. Those who have cut prices in his wake know that the step is contrary to economic sense, but they realize that it is far better to keep their plants going at a minimum of profit or even at no profit at all than to close them for lack of orders. They look for this move to stabilize trade and be the means of holding their organizations in tact.

Stick to Old Figures.

Some manufacturers are confident that they can weather the gale and get out of each truck what they put into it in money, labor, time and skill. Realizing that profits have been shaved as closely as possible they are going to get an adequate return or make a valiant fight to that end.

Others believe they see the handwriting on the wall and are mindful of what the early bird gets. Judgment and guess work are both factors in the decisions reached. Individual cases vary and where it may be good business for one concern to stand firm it is just as good business for another to make the jump at the right jumping-off place.

The Clydesdale, Denby, GMC, Mack, Nash, Northway, Packard, Republic, U. S., Winther and White are trucks the makers of which either have announced or indicated that present prices will be maintained. The Autocar has gone a step further and added the war tax and freight to the consumer's bill, the company formerly having absorbed these items.

Prices Guaranteed.

Many of these corporations have issued guarantees of prices until certain dates. The Clydesdale and Winther have been guaranteed until April 1. The Denby Motor Truck Co., Detroit, Mich., through L. B. Graham, sales manager, has advised all dealers that present prices will be maintained until Jan. 1, 1921, at least.

Among manufacturers who have decided to either take a loss or suffer a cut in legitimate profits are the producers of the Day-Elder, Diamond T, Federal, Ford, Gramm Bernstein, Indiana, L. M. C., Patriot, Selden, Standard and Stewart trucks. The Ford cut which caused all the trouble was from \$600 to \$545.

Reductions in prices have been announced to date as follows:

Day-Elder.		Old Price	New Price
1-ton	.....	\$2100	\$2100
1½-ton	.....	2450	2300
2-ton	.....	2950	2750
2½-ton	.....	3150	2950
3½-ton	.....	3950	3700
5-ton	.....	4950	4600
Diamond T.			
1½-ton	.....	\$2800	\$2450
2-ton	.....	3485	2835
3½-ton	.....	4825	3925
5-ton	.....	5675	4615
5-ton, special	.....	5900	4800
3½-ton, with body	.....	3100	2715
Federal.			
1-ton	.....	\$2600	\$2500
1½-ton	.....	2825	2725
2-ton	.....	3150	3025
3½-ton	.....	4100	3950
5-ton	.....	4750	4600
Light duty tractor	.....	3325	3200
Heavy duty tractor	.....	4300	4150
Gramm-Bernstein.			
Model 15, 1½-ton	.....	\$2250	\$2050
Model 65, 1½-ton	.....	2775	2725
Model 20, 2-ton	.....	3275	3175
Model 25, 2½-ton	.....	3875	3575
Model 30, 3-ton	.....	4975	4575
Model 35, 3½-ton	.....	4775	4375
Model 50, 5-ton	.....	5875	5275
Indiana.			
1¼-ton	.....	\$2425	\$2290
2-ton	.....	3140	2950
2½-ton	.....	3350	3150
3½-ton	.....	4150	3750
5-ton	.....	5075	4775
L. M. C.			
2½-ton	.....	\$2950	\$2540
Patriot.			
1500-2500 lbs.	.....	\$1990	\$1785
3000-5000 lbs.	.....	2785	2450
5000-7500 lbs.	.....	3845	3450
Selden.			
1½-ton	.....	\$2460	\$2360
2½-ton	.....	3550	3425
3½-ton	.....	4325	4175
5-ton	.....	5770	5600
Standard.			
1-ton	.....	\$2475	\$2250
2½-ton	.....	3520	3100
3½-ton	.....	4410	4000
5-ton	.....	5250	4800
Stewart.			
¾-ton	.....	\$1450	\$1295
1-ton	.....	1850	1650
1½-ton	.....	2450	1995
2-ton	.....	3075	2495
2½-ton	.....	3200	2575
3½-ton	.....	4100	3395

Government Proves Farmers Can Use Truck for \$20 a Year

This is the Difference in Actual Cost Without Placing Value on the Time and Labor Economies That Often Reach Large Total.

THE United States Department of Agriculture, through investigations of the experience of 831 corn-belt farmers who own motor trucks, which survey was conducted by the Division of Rural Engineering of the Bureau of Public Roads and the Office of Farm Management and Farm Mechanics, finds that the average cost of owning a truck, after definite savings are deducted, is between \$10 and \$20 a year.

For this latter sum the farmer and his family saves eons of time, crops and live stock are brought to market in better condition and at the exact moment to get the best prices and there are a host of other advantages which cannot be measured in dollars and cents.

On the average these trucks travel 2777 miles per year, and the cost of operation is between 16½ cents and 17 cents per mile, making the total annual cost from \$460 to \$470. Each truck displaces an average of 1.2 head of work stock. With the cost of keeping a horse a year in the corn belt around \$200, the reduction in expense for this item is in the neighborhood of \$240 per farm. For all farms the average amount of hired help saved by the trucks is \$163. On most farms these are the only two items of direct reduction in expense which can be credited to the truck, and on the average they amount to \$60 or \$70 less than the total cost of operating it.

To offset this added cost, custom hauling done with the trucks amounts to about \$50 per year for all farms, leaving only something like \$10 or \$20 annually as truck operating expense.

The investigation was made during the past winter and spring in Indiana, Illinois, Missouri, Iowa, Southern Wisconsin, Southern Minnesota, Southeastern South Dakota, Eastern Nebraska and Eastern Kansas, where corn is a leading crop and where general grain and live stock farming is also carried on.

Some of the important facts revealed by the investigation are:

The average size of the farms is 346 acres and their average distance from market is eight miles.

Only 14 per cent. of them are less than five miles from market, and 20 per cent. are 15 miles or more from market.

A little over one-fourth of these men have changed their markets, for at least a part of their produce, since purchasing trucks. For those who have changed market, the average distance to the old market was seven miles, and to the new market is 18 miles.

The rated capacity of these trucks varies from one-half to two tons. Seventy per cent. of them are rated at one ton, and only nine per cent. of them at less than one ton.

Experience with trucks has caused 57 per cent. of these men to decide that the one-ton size is best for their conditions, 25 per cent. that the 1½-ton size is best, and 12 per cent. that the two-ton size is best. Practically one man in four has decided that a truck larger than the one he now owns would be better suited to his conditions.

Ninety-one per cent. believe that their trucks will prove to be a profitable investment.

In the opinions of these men the principal advantage of a motor truck is in saving time, and the principal disadvantage is "poor roads."

Save Two-Thirds of Time.

As compared with horses and wagons, the trucks save about two-thirds of the time required for hauling to and from these farms.

On the average there are over eight weeks during the year when the roads are in such condition on account of mud, snow, etc., that these trucks cannot be used. The roads on which nearly 95 per cent. of them usually travel are all or part dirt.

The condition of the roads prevented the use of the trucks with pneumatic tires a little less than seven weeks during the year covered by the reports, and of those with solid tires a little over nine weeks.

Many Use Pneumatics.

Twenty-four per cent. of the trucks are equipped with pneumatic tires, 27 per cent. with solid tires, and 49 per cent. with pneumatics in front and solids in rear. However, experience has convinced 58 per cent. that pneumatics are best for their conditions, 35 per cent. that solids are best, and seven per cent. that pneumatics in front and solids in rear are best.

These men have return loads for their trucks about one-third of the time.

A majority still use their horses for some hauling on the road.

On more than half of the farms all the hauling in the fields and around the buildings is still done with horses and wagons.

About 40 per cent. of these men did some custom hauling with their trucks during the year covered by the reports. The average amount received by those who did such work was \$132.

Trucks Used but 112 Days.

Their owners estimate that on the average these trucks travel 2777 miles and are used on 112 days per year.

The average estimated life of these trucks is 6½ years, and on this basis depreciation is usually the largest single item of expense in connection with their operation.

The average cost of operation, including depreciation, interest on investment, repairs, registration and license fees, fuel, oil and tires, is 15.2 cents per mile for the one-half and three-quarter-ton trucks, 15.3 for the one ton, 21.3 cents for the 1¼ and 1½ ton, and 25.8 cents for the two ton.

The average cost of hauling crops, including the value of the driver's time, is 50 cents per hour, 24 cents per ton-mile with the one-half and three-quarter-ton trucks, 24.1 cents with the one ton, 23.3 cents with the two-ton trucks.

85 Per Cent. on Job Every Day.

Nearly 85 per cent. of these trucks had not been out of commission when needed for a single day during the year covered by the reports, and 80 per cent. of the owners stated that they had not lost any appreciable time on account of motor and tire trouble, breakage, etc., when using their trucks. About one truck in 15 was out of commission more than five days, however, and one owner in 40 reported a loss of more than five per cent. of the time when using his truck.

Fifty-six per cent. of these men have not reduced the number of their work stock since purchasing trucks. Twenty-four per cent. have disposed of one or two head, and 20 per cent. of more than two head. The average reduction for all farms is 1.2 head.

50 Per Cent. Own Tractors.

Half of these men own tractors as well as motor trucks. Most of the tractors are owned on the larger farms, however. Only 33 per cent. of the men whose farms contain 160 crop acres or less own tractors, while 65 per cent. of those with over 320 crop acres own them. The number of work stock kept on the farms where both trucks and tractors are owned is only slightly less than the number kept on the farms of corresponding size where only trucks are owned.

Seventy-eight per cent. of these farmers say that their trucks reduce the expense for hired help. On those farms where there is a reduction the operators estimate that it amounts to \$209 per year on the average.

NOTHING IS WRONG WITH THE TRUCK INDUSTRY

Readjustment Necessary to Stabilize Business Not Destructive—Workers Can Maintain Wage Scale If Their Efficiency Affords Maximum of Production.

PRACTICALLY every person engaged in the automotive industry as manufacturer, distributor, dealer, employer or employee, is deeply concerned of its future. There are those who believe that the prospect is decidedly uncertain; there are others who assume that the industry must undergo at least a period of adjustment before what may be regarded as a normal level shall obtain.

First of all every person concerned should understand that there is nothing radically wrong with the industry or its policies. While there is for the time being a diminution of demand for passenger cars, and one cannot foresee when there shall be increase, this is also true of all other industries and commerce.

There are innumerable reasons why there should be diminished demand for products of the mechanical industries. It is first of all the autumn of the year. Second, we are upon the eve of a presidential election with the attendant effect upon business in general. Third, a very large part of the people who have been agitating reduction of the cost of living are confining their purchasing to actual necessities.

Prices Greatly Inflated.

The conditions resultant from the enormous buying of foreign nations, which forced prices far above pre-war levels, could not be expected to continue. The continuance of production of industry at unprecedented cost for materials and labor depended entirely upon demand, and by no stretch of imagination could capital be expected to accumulate what would eventually be disposed of at loss.

The only logical solution was readjustment, which could only be undertaken cautiously and brought about gradually, so that there should be the least influence upon business generally. Every one must admit that the nations of the world would be large buyers were they not so greatly impoverished by the unprecedented drain upon their resources;

were not the rates of exchange so heavily against them.

No Market for Surplus Products.

No matter what their needs, they cannot buy in sufficient volume to consume the surplus production of our industries over domestic demands, and when there is lessened home consumption, such as resulted from the very general desire to economize, products accumulated until a point was reached where reduction of prices were resorted to to convert them into capital.

This is not meant to be criticism or alibi, but a plain statement with the intention of establishing the fact that primarily there is nothing wrong with the nation, with industry or the people, but a condition now obtains that necessitates readjustment, and when this has been made business will prosper.

There is nothing that should be regarded as more than natural and logical consequences of the abnormal activity and forced production incident to the great war.

Without question production and prices shall depend upon the demand. Nothing can force a market save prices, and no business can continue without a reasonable profit.

Wages Need Not Be Reduced.

One result that is feared by the people as a whole is the seemingly impending reduction of wages. Wages today are higher than ever before, but this does not mean that they must be reduced to lessen the cost of production.

What is wanted more than all else is production. If labor will produce to its fullest capacity this will in large measure reduce costs, and to a sufficient degree to justify buying, and this in turn will stimulate manufacturing in ratio to the demand.

Statement has been made that the efficiency of labor has been very low as compared with results obtained up to 1914, or about the beginning of the European war. Labor not only exacted its

own price, but reduced production so greatly that the manufacturing or processing costs were greatly increased, and the consuming public was compelled to pay these or deny itself, which was obviously impossible in the case of necessities.

Maximum Production the Solution.

Labor is unquestionably opposed to reduction of wages as well as limiting production by fixing the number of daily working hours. Those who have carefully considered the industrial conditions maintain that each worker should unhesitatingly produce all that is possible. Applying this to the normal periods of daily employment there appears to be no good reason why the workers cannot work out their own salvation and in comparatively brief time.

One must admit that as each group of workers has obtained increase of wages these have forced corresponding increases that have more than absorbed the added wages, and no matter what a worker earned the cost of living at least kept pace with his income, so that there was no tangible financial accumulation.

In other words, labor pyramided wages and industry pyramided values until the public ceased all but necessary buying. The solution is adjustment. This applies to every industry, but those that produce what may be regarded as luxuries and non-essentials may be the more acutely affected.

Must Establish Efficiency Standard.

The country is not going to the dogs. Business will not be destroyed. Conditions are not in the least discouraging. There is no question, however, that the period of joyous spending has ended and that the time has come when labor must establish a standard of efficiency.

No employer desires to reduce wages. Satisfied and contented employees are a great industrial asset. With an enthusiastic organization the possibilities for industry are practically unlimited. But success depends entirely upon produc-

tion, so that in the last analysis the efficiency of the workers is the determining factor.

Wages need not be decreased if labor wills to earn; if employees will deliver a full return, and there is not an employer who is not willing to stimulate production in largest measure. Ideal adjustment can only be brought about by co-operation of labor and capital. And the basic factor is production. There is no question of the future provided that labor will do its part, and it will reap reward in ratio to its endeavors and efficiency.

Future of Truck Industry Certain.

The future of the power vehicle industry is not uncertain. This is especially true of truck manufacturing and distribution. The demand for transportation was never so great. There is no probability of any considerable increase in railroads. As a matter of fact the re-

habilitation of the railroads, without considering expansion, will absorb all their earnings for a long period to come. Truck haulage has been proven practical from every viewpoint and to be economical of time and labor.

The great elasticity of truck haulage, its speed, its numerous economies, are well enough understood by business men. Trucking contractors are learning the value of systematic operations. Within reasonable distances public service can be made productive of substantial profits. Such services can be maintained to meet the demands and can be controlled by those they serve.

Economies Will Force Truck Use.

The nation, states and municipalities are building and improving highways that are available for truck haulage. The impelling factor for road construction is the economy of transportation. This econ-

omy cannot be realized unless highway haulage is developed and organized and with a view of practical public benefit—not with the object of promoting destructive competition of truck service and railroads.

The use of power trucks will increase very rapidly. The need of industrial and commercial economy will compel business men using them more generally and in greater numbers than ever before. There is no fear of the future of the industry. Trucks are positive necessities and there is no reason to believe that there will be over production.

The industry cannot do else than progress, but the success of each individual enterprise depends upon the ability of its executives and the resources it commands. The period of adjustment may vary, but the result will be that the industry will be larger and better established and in every way prosperous.

BETHLEHEM MOTORS PROSPECTS ARE GOOD SAYS RECEIVER.

Clinton E. Woods, receiver for the Bethlehem Motors Corporation, Allentown, Pa., has every confidence in the future of that organization. Sales since the appointment of Mr. Woods in August up to Oct. 11 aggregated \$265,523. There are 325 chassis on hand, of which 75 are not complete, but nearly so.

For November, 102 trucks are scheduled on export orders and it is estimated that domestic requirements will call for at least 50 more.

The factories at both Allentown and Pottstown have been materially reduced in their personnel with a corresponding effect on the payroll.

Business for the future promises to develop soundly. One dealer in a large Pennsylvania city has a definite market for 25 trucks during the next month; another in a western grain growing section will take nearly as many more, and some excellent orders are expected from Cuba. Various sections of Canada, too, are developing in a promising way, and with the passing of the election period early in November, Woods expects that other markets of this and other countries will show similar improvement.

RAILROAD RATES ADD LITTLE TO COST OF TRANSPORTATION.

The Bureau of Railway Economics in Washington estimates that the added cost of commodities transported from different towns and cities to New York as the result of the railroad rate increases is less than one cent for many retail sales units and over one cent for few. The units considered range from a suit of clothing, a pair of shoes, a sack of flour or a pound of sugar to a quart of milk, a dozen oranges or a peck of potatoes.

N. A. C. C. ADOPTS NEW TRUCK STANDARDS FOR SPEED AND BODY WEIGHT

New standards for body weight allowances, gross weight, chassis, body and freight load and the Standards Committee's recommendations on speeds were adopted by the motor truck members of the National Automobile Chamber of Commerce at a meeting at the chamber headquarters in New York city this month. At the same time demonstration charges for commercial vehicles embodied in standards adopted in 1912 were eliminated.

The table of standard body weight allowances follows:

Load Tons	Body Weight, Allowance, Lbs.
1-1½ tons.....	1200 pounds
2-2½ tons.....	1500 pounds
3-3½-4 tons.....	2000 pounds
5 tons and over.....	2500 pounds

It is recommended that no change be made in the note which now accompanies the table on standard body weight allowances.

The standard speed rating table follows:

Gross Weight, Chassis, Body and Freight Load	Speed, Miles Per Hour
Pneumatic tires up to 28,000 lbs..	25
Solid rubber tires up to	
4,000 lbs.....	25
8,000 lbs.....	20
12,000 lbs.....	18
16,000 lbs.....	16
20,000 lbs.....	15
24,000 lbs.....	15
26,000 lbs.....	15
28,000 lbs.....	15

It is urged these speed ratings should be recognized by the manufacturer as the maximum and not exceeded under any conditions. The manufacturer should stamp on the truck caution plate the actual maximum speed with load for which the truck is built and beyond which the truck is not guaranteed.

The committee recommends that the present form of standard caution plate should be retained and that the six foot notes should be retained with the exception of the note headed, "Speed Rating," which should be revised to read as follows: "The figures given in the table headed 'Standard Speed Ratings for Motor Trucks' should be recognized by the manufacturer as the maximum and not exceeded under any condition. Manufacturer should stamp on the truck caution plate the actual maximum speed with load for which the truck was built and beyond which the truck is not guaranteed."

As stated above truck manufacturers should be responsible for the weights which are called for on this plate, as follows:

Freight load capacity	Standard
Body weight allowance	Standard
Weight of chassis....	Standard Actual
Total weight, chassis body and load.....	Standard Actual

The truck manufacturer, his distributor, dealer or agent should be made responsible to see that the body is weighed and that the plate is stamped:

Body weight allowance.....	Actual
Freight load capacity.....	Actual

Forty-one trucks used by the Marine Corps in the war will be sold at auction in Philadelphia, Oct. 22. They include 15 Nash, 15 Studebaker, six Jeffrey, two Berry, one Mack and two Kings.

NEW PLANTS AND EXPANSIONS

MAXWELL-CHALMERS FINANCES BOOSTED \$15,000,000.

The sum of \$15,000,000 in new capital is provided through the refinancing plan worked out in behalf of the consolidated forces of the Maxwell Motor Co., Inc., and the Chalmers Motor Corporation by a committee representing the stockholders, the bank creditors and the merchandise creditors. Present stockholders will be given an opportunity to reinforce their equity by subscribing to the stock of the new company, but if they fail to do so it will be underwritten by a syndicate headed by Blair & Co., New York. Stockholders who do not deposit their securities will forfeit most of the value of their holdings, and it is expected they will take a large part of the offering.

The affairs of the consolidated companies will be absolutely under the direction of the committee on management headed by Walter P. Chrysler and J. R. Harbeck.

NEW HEIL ADDITION.

Heil Co., Milwaukee, maker of truck bodies, is erecting a one-story brick and steel shon addition, 136x275 feet. The new facilities will allow a greater output of tanks, dump bodies for trucks, hydraulic hoists, etc. An increased production schedule is being prepared by Julius P. Heil, vice president and general manager.

TOWER EXPANSION.

R. J. Tower, H. D. Baker, J. C. Smith and F. G. Rice have been elected directors of the Tower Motor Truck Co., Greenville, Mich., which has increased its capital to \$2,500,000 in order to provide facilities for a production of 1400 trucks the coming year.

BROCKWAY IN BOSTON.

The Brockway Motor Truck Co. of Boston has opened its new quarters at 1040 Commonwealth avenue, that city. Its facilities include a modern salesroom and service department.

CLARK EQUIPMENT CO'S NEW PLANT TO MAKE TRUCK AXLES EXCLUSIVELY

The Clark Equipment Co., Buchanan, Mich., the only concern manufacturing a complete line of internal gear drive truck axles, from three-quarters to five tons, and all sizes of steel disc wheels for solid and pneumatic truck tires, is looking forward to the early day when its magnificent new plant at Battle Creek will be in production.

The construction has been under way since March 1 and is almost completed. The work of equipping the factory will be shortly begun. Most of the machinery has been purchased and is on the ground ready for installation. This plant will be devoted exclusively to the manufacture of Clark motor axles. The new unit is expected to fully care for the rising demand from manufacturers for Clark axles.

All sales, engineering, purchasing and general administration will be handled as before through the general offices at Buchanan. There will also be put into force at the Battle Creek plant the same progressive policies of plant management and profit sharing which have proved so valuable at Buchanan.

The plant's site comprises 23 acres, with a 4600 foot frontage on the main line of the Michigan Central Railroad and a smaller frontage along the Grand Rapids and Interurban Railroad. It is located on the extreme western side of the city. The manufacturing building is 99 feet by 440 feet and a warehouse parallel to it is 50 feet by 144 feet. The two buildings are connected by two closed passageways. A third building houses the power plant.

NEW COMMERCE CAPITAL.

The Commerce Motor Car Co., Detroit, Mich., is increasing its capitalization to \$700,000, the latest increase being \$100,000. This new stock is being offered to shareholders at par of \$10. This will be used as additional working capital.

GENERAL MOTORS DIVIDEND.

General Motors Corporation directors have declared the regular quarterly dividends on all classes of stock as follows: \$1.50 a share on the preferred, \$1.50 a share on the 6 per cent. debentures, \$1.75 a share on the 7 per cent. debentures and 25 cents in cash and 1/40 of a share in common on the outstanding common capitalization. The dividends are payable Nov. 1 to holders of record Oct. 5.

TO MAKE TRUCK BODIES.

The Dayton Body & Cabinet Co., Dayton, O., recently incorporated with \$50,000 capital to manufacture commercial bodies, has taken over the Colonial distillery building at Trebeins, near Xenia, O., and is making alterations and installing equipment. C. C. Breech is president and others prominent in the concern include D. L. Waggoner, D. L. King, J. Davies and V. B. Duvall.

PACKARD KANSAS CITY BRANCH.

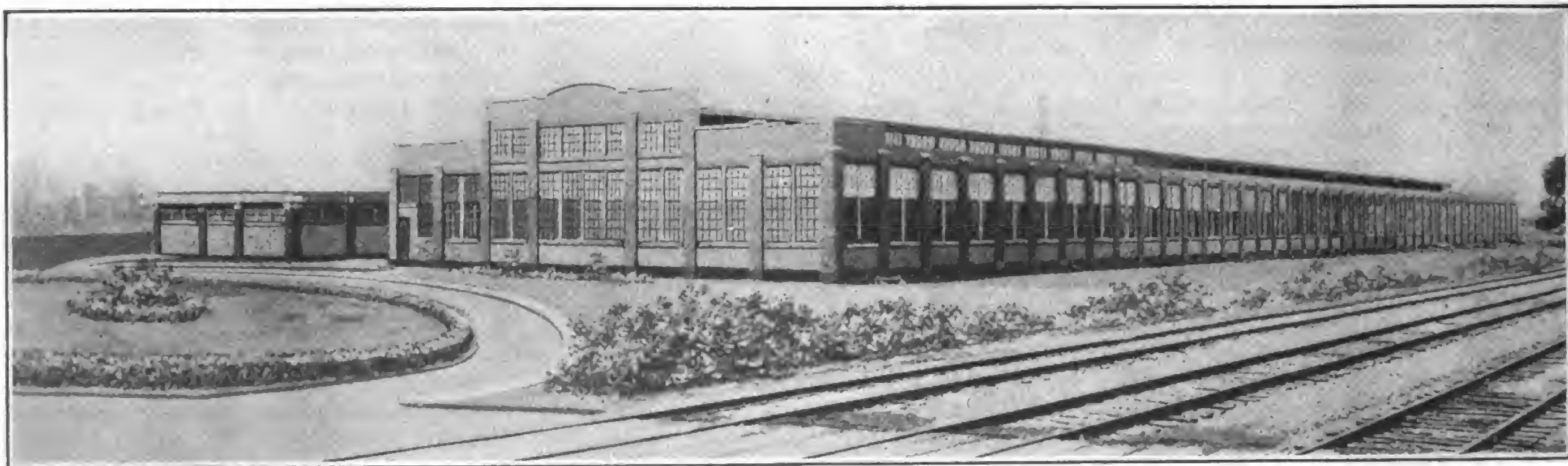
The Packard Motor Car Co., Detroit, has opened a factory branch at Kansas City, Mo., where a complete line of passenger cars and trucks will be distributed. A new building will be erected at an early date. T. Harris Smith is general manager and E. D. Knowles carriage sales manager of the new branch. Both are former factory executives.

WHITE BUYS LAKE STEAMERS.

The White Motor Co., Cleveland, O., which reports its output sold to Jan. 1, has bought two lake steamers to help get deliveries out on time. The White company, which has changed its prices but little in recent years, will make no reductions.

HAWKEYES TO ENGLAND.

The Hawkeye Truck Co., Sioux City, Ia., has received an order for \$80,000 worth of trucks from Richards, Thyma & Co., London, England, for immediate delivery.



The Fine New Plant of the Clark Equipment Co., at Battle Creek, Mich., Which Is Nearing Completion and Will Be Used Exclusively for the Production of Truck Axles.

COMPLETED AND PROJECTED

WALKER AXLE CO. FORMED.

The Walker Axle Co. has been formed at Chicago with \$2,500,000 capital to manufacture the Walker balanced double reduction rear axle for motor trucks. The Edward Valve and Manufacturing Co. at its plant in East Chicago, Ind., is now manufacturing the axles, but it is proposed to erect a plant to be devoted exclusively to the manufacture of the Walker axles at 87th and State streets, Chicago, adjacent to the new modern factory buildings of the Walker Vehicle Co. and the Federal Electric Co. Until this new plant is erected the East Chicago factory will manufacture the axle.

William A. Fox is the president; G. A. Freeman, vice president and general manager; John F. Gilchrist, treasurer; William S. Kline, secretary, and George R. Walker, chief engineer. The general sales manager is Lloyd J. Bohan.

All of these officials are prominently connected either with the Commonwealth Edison Co., the Walker Vehicle Co., the Edward Valve & Manufacturing Co., or the Federal Electric Co., and some are associated with two or more of these concerns. The Walker Vehicle Co. is the largest manufacturer of electric trucks in the country.

RUGGLES CO. INCORPORATED.

The Ruggles Motor Truck Co., Ltd., has been incorporated at London, Ont., with a capitalization of \$3,000,000. Manufacturing will start at once in temporary quarters. Land has been purchased and plans are being prepared for a new factory. The company has enough orders on hand to keep the proposed factory running for a year.

FIELD BODIES FOR GMC'S.

The General Motors Truck Co. has awarded a contract for its entire 1921 business on truck bodies and cabs to the Field Body Corporation. New models will be used and patterns are now being made.

TO PRODUCE TRUCK PARTS.

The Georgia Republic Co., Macon, Ga., has been incorporated with \$50,000 capital to make truck parts and similar products. The incorporators are T. E. Turner, J. L. Soyars and R. M. Yatlin.

\$750,000 WHEEL FACTORY.

National Gear & Truck Wheel Corporation plans the erection of a \$750,000 factory on 130 acres of land just purchased at Vanport, Beaver county, Pa.

\$500,000 PIONEER ADDITION.

The Pioneer Truck Co., Chicago, Ill., has completed the plans for the construction of six one-story factory buildings at a cost of a half million dollars.

BETHLEHEM PLANT RUNNING.

Both the bank and merchandise creditors' committees have approved the plans made for continuing the activities of the Bethlehem Motors Corporation, Allentown, Pa., up to Nov. 1. No action has been taken concerning operation of the plant beyond that date.

The receiver's programme calls for the completion between Sept. 17 and Oct. 31 of 228 trucks. There are now in stock 206 completed vehicles. Sales requirements for this period are estimated at 223. Export orders booked will take 86 trucks, of which 20 will go to Manila, 18 to Delhi, India, 12 to Barcelona, Spain, and nine to Pernambuco, Brazil. Foreign orders expected total 120, of which 43 should go to Havana. Sixty-seven orders have been received since the receivership became effective.

BIGGER NORTHWAY OUTPUT.

The Northway Motors Co., with truck factory at Natick, Mass., has jumped its production of trucks to 100 a month and plans to produce a passenger car. President Cavanagh of the company is laying lines for a big export business, the location of the plant near the seaboard offering special facilities for the shipment of trucks abroad.

GMC PLANT READY DEC. 1.

The General Motors Truck Co. expects to have its new plant at Pontiac, Mich., in full swing by Dec. 1. The building cost \$1,300,000 and provides 170,000 square feet of floor space. The equipment cost \$1,500,000, new machinery being valued at \$600,000, the balance having been moved from the former factory.

PLAN PATRIOT BODY PLANT.

Patriot Motors Co., Lincoln, Neb., is contemplating the erection of a branch of its truck body building plant at Houston, Tex. Representatives of the company have been in conference on the subject with the Houston Chamber of Commerce. L. A. Winship, secretary and treasurer, made the trip from Nebraska by airplane.

CHICAGO AXLE CO. FAILS.

The Chicago Standard Axle Co. has been placed in the hands of a receiver, court action being with the consent of the company. Cancellation of orders is blamed. Liabilities are given at \$140,000. The assets are chiefly machinery.

MAY CUT STEEL PRICES.

Officials of several large steel companies are known to be seriously considering the suggestion of the Ford Motor Co. that prices be reduced.

PIERCE-ARROW EARNINGS.

Pierce-Arrow Motor Car Co.'s earnings for the quarter ending Sept. 30 are in the neighborhood of \$600,000, which represents \$1.50 a share on the common stock after preferred dividends are paid. The net profits for the two preceding quarters were a trifle over the \$700,000 mark. Returns for the year should equal those of last year when net profits after all charges were \$2,491,070, or \$6.75 a share on the common.

ALL-AMERICAN HITS SNAG.

Although a petition in bankruptcy has been filed against the All-American Truck Co., Chicago, it is anticipated that the affairs of the company will be ironed out so that there will be no halt in production. The debts of the company aggregate \$400,000, while it has current assets of \$600,000 and fixed assets of about the same amount. Creditors are reported to be ready to cooperate in continuing the business.

ACME BODY ADDITION.

The Acme Body Works, Appleton, Wis., which manufactures both passenger and truck bodies, has been hitting a high pace since its formation a year ago, work having been begun on its fourth factory addition. The company is operating at full capacity and is 200 orders behind. Its present weekly output is from 30 to 35 bodies. Ten large omnibus bodies are under production.

SMALL TRUCK PRODUCTION.

There were only 14,369 trucks manufactured in 32 plants in the Detroit and Michigan territory during September, of which about 10,000 were turned out at the Ford plant. October will be another month in which under production will be noted.

WHARTON TO BUILD.

The Wharton Motors Co., Inc., of Dallas, Tex., has received the plans and intends to start at once on the construction of a plant for the manufacture and distribution of trucks, tractors and automobiles.

DENBYS IN MAIL SERVICE.

The Bay City Auto Body Co. is manufacturing bodies for several hundred Denby trucks which will be used in the mail service. The contract was given by the government.

MANUFACTURERS CHEERFUL.

Members of the Motor Truck Manufacturers' association in convention at Chicago early this month expressed optimism over the future of the industry.

PLAIN FACTS OF TRUCK HAULAGE

GRAHAM PROPOSES PUBLIC SERVICE EXPANSIONS WITH MOTOR BUSES

George M. Graham, vice president of the Pierce-Arrow Motor Car Co., Buffalo, N. Y., and a member of the motor truck committee of the N. A. C. C., addressed the American Electric Railways association at Atlantic City, N. J., recently and urged the addition of motor 'bus lines to handle peak traffic. He contended that if the public should like motor 'bus travel it is up to the trolley lines to meet the demand of the consumer.

Mr. Graham gave figures to show the popularity of omnibus service in London and New York city where many millions are carried by this agency.

It is right, Mr. Graham believed, that there should be certain regulations protecting trolley franchises and regulating 'buses so far as these rules are for public protection, and not designed to discriminate in favor of electric lines. Where trolley service becomes inefficient in comparison with the 'bus, it should not be artificially kept alive by legal protection.

The important factor in city transportation is freedom from traffic congestion. This is the great advantage of the Fifth avenue 'buses which load and unload passengers at the curb, keeping center of the highway free for private vehicles. There is also a safety factor here, only 23 accidents having occurred on this system in 1919, of which only one proved fatal. New York 'bus lines have cut down the running time between points from 20 to 50 per cent.

'Buses can give service on streets parallel to congested trolley tracks, and thus not only handle passengers on the parallel streets, but make possible a faster trolley service. The 'bus could offer also a short cut between factories and principal residential districts, thus avoiding transfer of large masses of rush hour riders at a few overcrowded points. The 'bus would offer the possibility of a flexible corps of vehicles to help in emergencies, Mr. Graham pointed out.

CONNECTICUT T. & E. CO. PLANS TO PROTECT PATENTS.

The Connecticut Telephone & Electric Co., Meriden Co., manufacturer of ignition systems, is in the courts to protect the reputation of its products and the interests of its users by eliminating not only the manufacture, but also the distribution of alleged spurious parts.

A temporary restraining order has been issued against Millwood and Brackett of Des Moines, Ia., in the United States District Court, to prevent their disposing of certain replacement parts in their possession which are alleged to violate patents of the Connecticut company. An early date is set for final hearing.

OCT. 27 LAST DAY TO DEPOSIT STOCK OF MAXWELL-CHALMERS CO.

The management committee of the Maxwell Motor Co. and the Chalmers Motor Corporation reorganization reported the middle of the month that over 78 per cent. of the outstanding 804,524 shares of the stock of these companies had been deposited under the new readjustment plan and that, in order to give full opportunity to all stockholders and unsecured creditors to participate in its benefits the time for the deposit of stock, notes and claims with the Central Union Trust Co. of New York had been extended until the close of business on Oct. 27.

Unsecured notes and claims aggregating over \$11,000,000 have likewise been deposited and substantial additional deposits have been promised.

BIG SINCLAIR PRODUCTION.

Earnings have shown a decidedly rising tendency since the consolidation of the various Sinclair oil companies into the big corporation a little more than a year ago. There has been put into the corporation in earnings and money obtained from new security issues approximately \$120,000,000. This total is almost equal to the present market value of the entire capitalization of Sinclair stock outstanding.

Most of the money put back into the company was employed in acquisitions, new construction and working capital. The benefit of these expenditures is now being reaped in increased earning power from new production, new refineries and new ships.

Between now and April, 1921, nine new tankships will have been delivered to the Sinclair company. The company is now producing in this country, and in Mexico, approximately 135,000 barrels of oil daily.

DRIVE DUPLEX TRUCK 935 MILES ON SPEEDWAY IN 24 HOURS

A Duplex Limited truck on the first day of this month created what is claimed to be the first authentic standard of speed and endurance ever formally established by the modern type of truck, designed for prompt service and especially adapted to pneumatic tires.

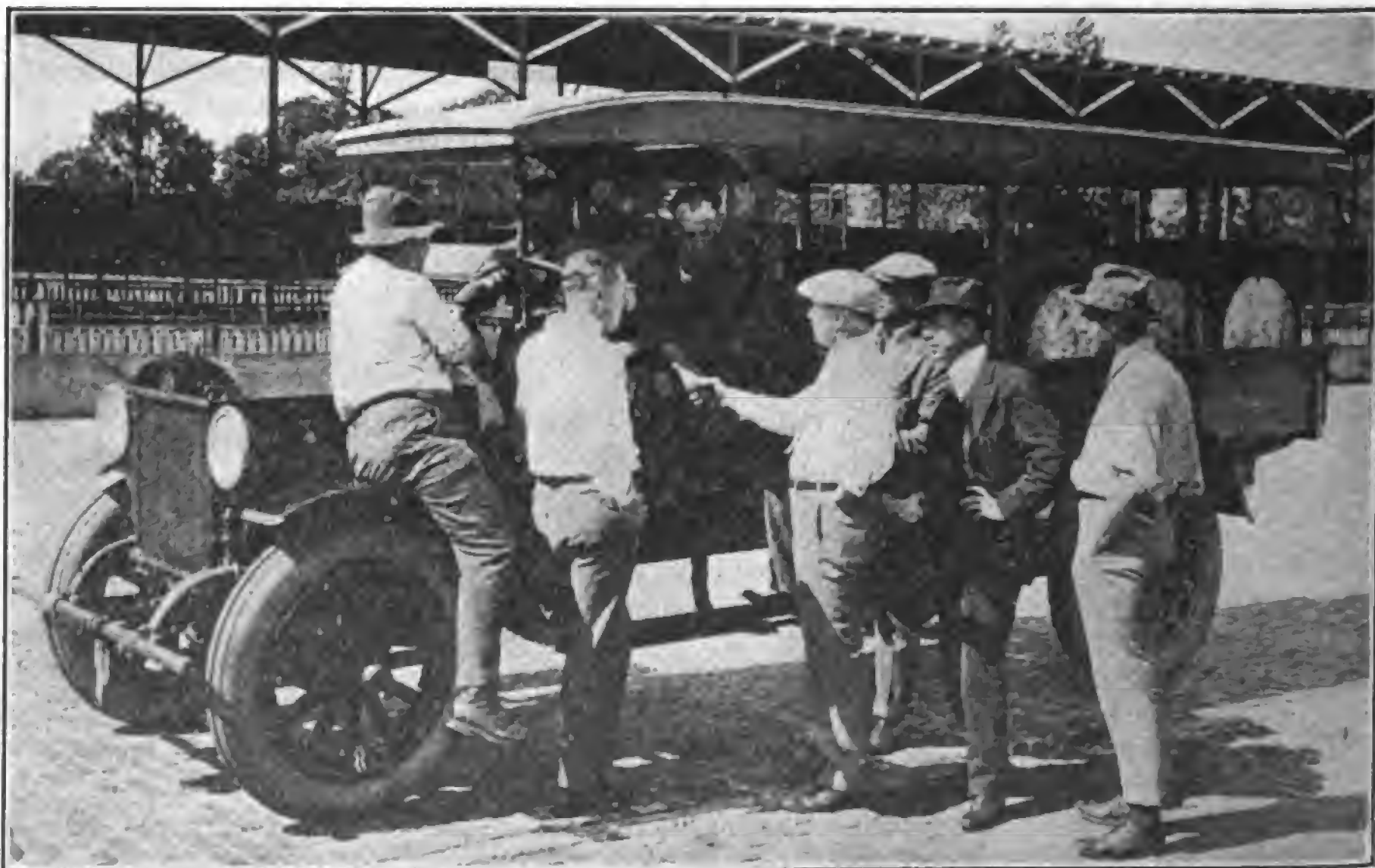
The run was made on the Indianapolis Speedway and a total of 933 miles was covered in 24 hours of continuous operation, an average of 39 miles an hour. As proof that the truck was in splendid condition immediately after the close of the run it was sent a complete lap of the 2½-mile brick speedway in 3:24.4, a rate of 44½ miles an hour.

The truck was officially certified as standard stock. It was equipped with a Hinkley heavy duty engine, Covert transmission, Sheldon axle and Firestone pneumatic tires. It carried a full rated load of 3000 pounds, as well as reserve supplies of gasoline and oil.

On account of the fact that the truck carried supplies sufficient for the entire distance, the two drivers are undoubtedly able to boast having covered the longest distance ever traveled on wheels without a stop.

Two drivers—LaVerne Goldsmith and Paul Baer from the Duplex factory at Lansing, Mich., alternated at the wheel and rode the entire distance without stop or slow down.

Check and technical observation were in charge of J. Edward Schipper. The timing was by the Speedway chronometer. A considerable party of engineers inspected the truck before the run and witnessed its performance. Through the night the truck traveled by its own electric lights.



The Duplex Limited Two-Ton Standard Stock Truck That Was Driven 935 Miles in 24 Hours on the Indianapolis Speedway.

NEW YORK TRUCK SHOW SPACE DEMANDS NOW EXCEED AVAILABLE AREA

PREPARATIONS are rapidly making for the motor truck show that will take place at the 12th Regiment Armory, New York City, under the auspices of the Motor Truck Association of America, Inc., Jan. 3-8 inclusive. In an interview Theodore D. Pratt, general manager of the association, sets forth the reasons why the projected exhibition bids fair to be the most successful ever organized in New York.

In the organization for the show Mr. Pratt has been given cordial cooperation and the support already pledged to the undertaking by the Motor Truck Association has been heartily indorsed by the trade in general.

The most difficult problem with which the show committee has to contend is satisfying the applicants for space with the area that is available, for notwithstanding the fact that the 12th Regiment Armory has 50 per cent more floor space than has Madison Square Garden, the totals applied for to date exceed this considerably.

Mr. Pratt plans that this show shall be a little broader in its scope than have been those of the last, and while it may still serve the manufacturer to the same extent as heretofore, the dealer is to receive very definite attention.

The association, because of its various affiliations, is in a position to bring together the buyer and the seller and expects to make of the show a meeting ground where they can get together and solve their problems to their mutual advantage.

Some Special Show Features.

An information bureau will be estab-

lished where expert advice may be obtained on the various subjects that interest the truck user, special attention being given to the following subjects:

How to select a truck best fitted for special needs.

How to operate a truck at minimum cost.

What system of accounting will best apply to any specific case and show the leaks in operation that are so expensive.

How to prevent accident.

Insurance costs and protection.

Laws and ordinances affecting the operation of trucks and trailers on the public highways.

Highway transportation and the long distance haul which has gained so much prominence of late through the ship-by-truck movement, will be taken up thoroughly.

Lectures will be held on this and other subjects and articles by eminent authorities on each will be published and distributed at the show. In this connection special attention will be given to co-operation of the motor truck with the railroads.

The congested condition of New York city's transportation will be in the hands of a special committee which will receive suggestions from any one interested as to its practical solution.

Will Survey Truck Faults.

The last subject alone is of interest to every business man in New York and the Motor Truck association will have the cooperation of the Merchants' association, the Chamber of Commerce, the railroads, etc.

A committee of special interest will be

one composed entirely of truck operators who will receive complaints from anyone operating a truck in which he may set forth that which seems to him a discrepancy in the particular make of truck he uses. These complaints will be turned over to the maker of the truck referred to in each case and it is expected that much information of value may be accumulated in this way.

The show committee has engaged the January issue of Highway Transportation as its official programme and has ordered a minimum edition of 25,000 copies, which will be distributed free of charge to all entering the armory.

This programme number will also contain many interesting articles in addition to the programme and will be useful as a book of reference after the show is over.

That the Motor Truck association should have arranged such a comprehensive programme is no surprise to those who have been acquainted with its activities in the past, for it has always done well that which it has undertaken.

The Motor Truck association has among its members those who own and operate in excess of 35,000 trucks in New York city, and because of this and its close affiliations with other civic bodies, it is assured of the attendance of those vitally interested in motor trucks.

It thus offers to the dealer and manufacturer through this show the opportunity to meet face to face the real buyers of their product, a chance to present the merits of their products to the real purchasing power of the greatest truck market in the world.

NEW DEMURRAGE RATES.

At this month's meeting of the National Industrial Traffic League the report of a special committee dealing with railroads on demurrage matters was adopted. This favors increased demurrage rates for a period of six months on the basis of \$3 per day for the first four days after free time; \$6 per day next three days and \$10 for each succeeding day. Rules more favorable to shippers in a case of delay by strikes and bunching of cars in transit are contemplated. The league has joined the American Railroad association in requesting the approval of the Interstate Commerce Commission.

A resolution was adopted opposing the compulsory use of the metric system of weights and measures.

The league favored direct dealing of employees with local labor adjustment boards of railway officials rather than through national boards.

A special committee was appointed to confer with carriers on defining and limiting the free placement of cars at factory sidings. In the form suggested by a committee of railroad traffic of-

ficials at the meeting this seems to contemplate extra charges on a considerable proportion of cars spotted.

TERMINAL AT ROCHESTER.

The Rochester Motor 'Bus & Terminal, Inc., which was recently formed with a capitalization of \$125,000, will shortly have under way a large terminal at Rochester, N. Y. At least 15 freight carriers operating 25 trucks and hauling at least 100,000 pounds daily and seven passenger 'bus lines with 14 'buses carrying fully 300,000 passengers a year will occupy the terminal.

TRAILERS IN OIL FIELDS.

One trailer manufacturer has distributed more than 1200 pipe trailers in the past 12 months in the oil fields of Texas, Oklahoma and Wyoming, showing the strides this industry is making. One-third of the output of one leading company for the year has been pole and pipe trailers for the oil and lumber industries. Pipe trailers drawn by motor trucks are reported to be doing 75 per cent. of all the hauling in the oil fields. Many of

the trucks are of the four-wheel-drive type, and many of the trucks and trailers are fitted with giant pneumatic tires, which enable them to traverse mud and sand when ordinary trucks cannot get through. Loads of 10 to 15 tons are hauled on the truck and trailer combination, the weight being distributed over six wheels.

50 'BUSES ADDED TO LINE.

The People's 'Bus Line, which is operating out of Wilmington, Del., has added 50 'buses to its equipment and will reach a number of new points in the territory surrounding that city. The 'bus line charges five cents, while the trolley fare in the neighborhood is eight cents.

I. H. C. SERVICE STATION.

The Union Truck & Storage Co., Jackson, Mich., has taken over the distribution of the International Harvester Co. trucks in that section of the state and has also established a modern service station for the convenience of owners of International trucks.

NEW DISTRIBUTORS AND AGENCIES

NEW APEX REPRESENTATIVES.

The Hamilton Motors Co., Grand Haven, Mich., manufacturer of Apex trucks, has made a number of important additions to its sales staff. H. H. Brown and Walter A. Murphy, both of whom were formerly with the Four Wheel Drive Auto Co., have been given important territory. Brown will have charge of the district comprising Western Missouri, Illinois, Indiana, Ohio and Kentucky, with headquarters at Chicago. Murphy has been appointed district sales manager for Michigan, Wisconsin, Minnesota, Iowa, North and South Dakota, Kansas and Western Missouri, with headquarters in Chicago. L. R. Hunter has been given charge of the territory of North and South Carolina, Georgia, Florida, Alabama and Mississippi, with headquarters at Atlanta. Hunter has been located at the company's New York office for some time.

HEBER FWD DISTRIBUTOR.

H. E. Heber, for several years sales manager for Harry E. Herndon, Inc., Los Angeles, has purchased an interest in the FWD Truck Co. of Los Angeles, distributor of FWD trucks in Southern California, and will take a leading part in perfecting a dealers' organization.

\$300,000 MASTER AGENCY.

The Waddell-O'Brien Motor Co., Kansas City, Mo., with branches at Oklahoma City and Wichita, Kan., has increased its capital stock from \$200,000 to \$300,000. The company distributes Master trucks and Grant cars.

DETROIT STANDARD DEALER.

The Potts Motor Sales Co., Detroit, will handle Standard trucks. Fred Ambary, former manager of the Toledo, O., branch of the L. B. Orloff Co., has been engaged as sales representative.

NEW INTERNATIONAL DEALER.

International Harvester Co., Chicago, Ill., has appointed Armock & Meek distributors of International trucks at Grand Rapids, Mich.

NEW BOSTON GMC OFFICE.

The Noyes-Buick Co., distributors of Buick cars and GMC trucks, has opened its new building at 857 Commonwealth avenue, Boston, Mass.

NEW DUPLEX DISTRIBUTOR.

The Fletcher Auto Co., Bay City, Mich., which handles Hudson-Essex and Dort cars, will also distribute Duplex trucks in that territory.

CONVENTION OF DEALERS' DRAWS 200 ENTHUSIASTS TO REPUBLIC PLANT

More than 200 distributors of Republic trucks made Alma, Mich., their destination on Sept. 13 and 14, the Republic factory being the mecca for these representatives, some of whom came from the very ends of the earth. For zip and zeal the convention went ahead of any gathering ever held under the auspices of this organization. Every man was a Republic booster when he came and was hitting still higher notes on the shouting scale when he went away. Bankers, legislators and other distinguished guests were visibly impressed with the loyalty and spirit which was manifested throughout the 48-hour session.

Thomas M. House, vice president and general sales manager of the Republic Truck Sales Corporation, acted as chairman of the convention and delivered the address of welcome, during which he outlined the purposes for which the meeting was called and explained in detail the definite objects which the Republic company has outlined for achievement.

Addresses were delivered by Walter P. Chrysler and H. I. Shepherd, general manager, and treasurer, respectively, of the entire Willys' interests. The assembled Republic distributors listened with close attention to the important messages given by these men, affecting the status of the Republic business at the present time and for the future. They made it plain that it is the definite object and purpose of the controllers to greatly expand the policies and sphere of action of the Republic company, bring it to a new and higher level and establish it upon a pedestal of dominance in the truck industry. The enthusiasm with which the addresses were received showed plainly that the Republic organization is today stronger and more closely united than ever before in its history.

W. J. Baxter, vice president of the Republic Motor Truck Co., Inc., and president of the Torbensen Axle Co., addressed the convention and substantiated the policies and plans which had been previously outlined by Mr. House. He expressed his conviction that the 200 or more assembled distributors would give Mr. House and his internal organization undivided support and cooperation, and prophesied a phenomenally successful future for the entire Republic organization.

The convention furnished many features of educational value through addresses delivered by Theo. F. MacManus of Detroit; Chas. C. Parlin, manager commercial division, Curtis Publishing Co., Philadelphia; C. W. Reid, manager Transportation Bureau of the Federal Highway Commission, Washington, D. C., and H. L. Dewey, special equipment engineer of the Republic company.

A \$350,000 DISTRIBUTOR.

Cole Motor Co., which distributes Cole, Chalmers and Maxwell cars and trucks in Buffalo, N. Y., has changed its name to the Edward H. Baker Corporation, and has jumped its capital from \$10,000 to \$350,000. Mr. Baker continues as the principal stockholder and president, the other officers being Vice President J. L. Justice, Treasurer Mrs. Annie Pike and Secretary W. F. Hofhema.

DUPLEX TRUCKS IN ALBERTA.

Duplex trucks will be handled in Alberta, one of the most important territories of the Dominion of Canada, by A. K. Foss of Calgary. Alberta had a population of about a half million at the last census six years ago and it is estimated that there has been an increase of at least 37½ per cent. since. Calgary and Edmonton are both cities which pass the 50,000 mark in population.

NEW STEWART DEALER HOME.

The Maurice Auto Co., Worcester, Mass., distributor of Stewart trucks in Worcester county, will occupy quarters in a new \$300,000 building on Greene street, where there will be garage room for 300 cars. The company will have a sales and service station and, in addition to carrying an unusually large line of Stewart parts, will also have a full stock of Continental Motor parts.

24-HOUR REPAIR SERVICE.

The National Chain Motor Service Corporation, which plans to establish a 24-hour truck repair service over a wide area, has opened its initial office at 128 Cambridge street, Cambridge, Mass. J. C. Speirs, formerly general manager of the Autocar Co., is president of the new corporation.

KELLY WISCONSIN DISTRIBUTOR.

The Kelly-Springfield Sales Co. has been incorporated with \$50,000 capital at Milwaukee to distribute Kelly-Springfield trucks in the Wisconsin territory. The incorporators are John A. Dietrich, Julian Olds and J. A. Wickham.

FWD IN CENTRAL STATES.

The Rennoc Sales & Service Co., Philadelphia, has been engaged to distribute FWD trucks in Delaware and parts of Pennsylvania and New Jersey.

NEW RELIANCE DISTRIBUTOR.

The Reliance Motor Truck Co., Appleton, Wis., has appointed the Auditorium Garage, Milwaukee, Wis., as distributor in that territory.

REFLECT ACTIVITY OF INDUSTRY

DROPS HORSE-DRAWN VEHICLE FOR TRUCKS.

Sam B. Robertson, for 20 years manager of the Kansas City vehicle branch of the Studebaker Corporation, has heard the call of the motor horn and has abandoned the horse-drawn vehicle business for motor trucks. The new Robertson Motor Co. will handle Graham trucks. It is to have a permanent home in a new building in process of construction at 26th street and Grand avenue. Its temporary quarters are at 1523 Grand avenue.

BEAVER TO SELL STANDARDS IN FOUR STATES.

The Standard Motor Truck Co., Detroit, announces that H. D. Beaver has taken over the business of the Standard Motor Sales Co., Denver, Col., distributor of Standard trucks. He will handle Standards in Colorado, New Mexico, Nebraska and Wyoming.

WORTH ELECTED AN EXECUTIVE OF SAFETY COUNCIL.

W. E. Worth, assistant manager of the Industrial Relations Department of the International Harvester Co., Chicago, was elected third vice president of the National Safety Council of the ninth annual Safety Congress held in Milwaukee, Sept. 27-Oct. 1.

HANDLING THE RAINIER.

Allen H. Guyette has become sole owner of the Guyette-Jones Sales Agency, 213 South Main street, Wilkesbarre, Pa., and is now operating under the name of the Guyette Motor Sales Co. He is handling the Rainier truck and the Beeman tractor. The concern also repairs trucks and cars.

GENUG'S NEW CONNECTION.

Harry Genug, president of the Kansas City Motor Dealers' Association, has sold his interests in the Southwest Day-Elder Co. to H. A. Dougherty, president of the H. A. Dougherty Motor Co., and has purchased the latter's interest in the D and D Co.

DISTRIBUTOR CHANGES NAME.

Motor Products, Inc., Milwaukee, distributor of Republic trucks in that district, has changed its name to the Perego-Clarkson Co. A. K. Perego is president and general manager.

THE RIKER IN OREGON.

The Willamette Motors Co., Portland, Ore., has been given the Oregon distribution of Hare's Motors products, including the Riker truck.

SERVICE BACKS DEALERS.

Division sales managers of the Service Motor Truck Co. held a convention at the factory at Wabash, Ind., Sept. 17 and 18, when every division in the country was represented. The visitors unanimously reported that truck sales were made in greater volume last month than during July and August.

The main point under discussion was as to means to help dealers in their re-sale work. The factory does not consider that it has made a sale when the truck is sold to the dealer, inasmuch as the sale is not completed until the truck is delivered to the ultimate consumer. To this end a greatly increased advertising schedule has been laid out, together with plans for dealers' follow-up work.

TO DISTRIBUTE TRANSPORTS.

The Transport Truck Co., Mount Pleasant, Mich., has appointed the Anthony Kayser Co., 233-240 South 11th street, Philadelphia, Pa., distributor for Transport motor trucks in that territory.

GARY AGENCY IN CHICAGO.

The Gary Motor Sales Co., 2411 South Michigan avenue, Chicago, has been formed by Thomas Rosin and Harry Green to distribute Gary trucks in that district.

NOBLE INDIANA DISTRIBUTOR.

Noble trucks and Miami trailers are being handled in the Indiana territory by the Whitaker-Kime Sales Co., 320 North Capitol avenue, Indianapolis.

NEW SELDEN DISTRIBUTOR.

The Thomas J. Brocar Co., Louisville, Ky., has been appointed distributor for the Selden truck in that state.

NEW FWD DISTRIBUTORS.

FWD truck franchises have recently been granted as follows:

Talbot-Miller Motor Co., Baltimore, entire State of Maryland, except three counties.

Lambert-Jones Motor Co., Oklahoma City, the State of Oklahoma and part of Texas.

Ballard-Tait Sales Co., Brunswick, Ga., the greater part of Georgia.

HURLBURT WITH MAXWELL.

William B. Hurlburt, formerly president of the Hurlburt Motor Truck Co., has joined the staff of A. E. Barker, general sales manager of the Maxwell Motor Co., Inc., which is handling the Maxwell and Chalmers lines. He has been a Cadillac, Packard, Garford and Thomas executive. The office he will fill with the Maxwell forces has not been named.

ANDREWS SELLING TRUCKS.

S. G. Andrews, for seven years a Good-year representative, has resigned to take charge of sales and service for the Sutton Sales Co., New York city distributors of Jumbo and Reo trucks. He succeeds Guy H. Jenkins, who has joined the Garber-Buick Co.

TRANSPORTS AT TOPEKA.

The Kaw Valley Motor Co., 911 North Kansas avenue, Topeka, Kan., has been formed with G. N. Murray and H. O. Walker in charge to handle Transport and Oshkosh trucks and Lexington cars in that territory.

L. W. CASH RESIGNS.

L. W. Cash, purchasing agent of the Defiance Motor Truck Co., Defiance, O., has resigned and concluded his duties on Oct. 1.



Group of the Division Sales Managers for the Service Motor Truck Co., Assembled During a Convention Held Last Month at the Factory at Wabash, Ind.

SOME PHASES OF TRUCK UTILITY

DRIVE IN MIDDLE WEST TO KEEP HIGHWAYS CLEAR.

The campaign to keep the highways of the Middle West clear of snow this winter so that the continuity of motor truck transportation be not impeded, was opened with a meeting at the Hotel Statler, Cleveland, the first of the month, with J. L. Harrison, senior highway engineer of the U. S. Bureau of Roads, and K. A. Moore of Detroit, assistant traffic manager of the National Automobile Chamber of Commerce as speakers. The drive is under the auspices of the latter organization and will be continued with meetings at many other points.

The speakers pointed out the disastrous results to producer and consumer should the highways be clogged to truck traffic this winter. This was made apparent by reference to the thousands of tons now hauled by power on the roads of the Middle West. The use of the left-over army trucks awarded the various states, equipped with snow plows, was advocated. Interest in the subject was aroused and Ohio is one state which will take issue with the elements at an early date and battle to ward off any interference with road transportation.

MISSOURI TRUCK TOURS.

The first of two truck tours in the interests of the proposed \$60,000,000 good roads bond issue left Kansas City, Sept. 27 for a 30-day jaunt, which will take the travellers as far as St. Louis. A second caravan will leave St. Louis when the first tour ends and will wind up in Kansas City.

LINCOLN HIGHWAY MARKED.

The Lincoln Highway association has completed the marking of that highway across Pennsylvania, Ohio and Indiana, doing a good job. Truck drivers and the general motoring public are appreciative.

TRUCK EQUIPPED WITH POWER WINCH FOR UNDERGROUND CABLE STRETCHING

Stretching wire cable for telephone or telegraph service in underground conduits has for years been exceedingly variable work with reference to time and labor because of the means available for handling cable and the numerous obstacles. Laying cable is usually done by construction gangs. These works are in different locations and movement of the gangs is usually by trucks with a view of economizing time. Logically the trucks carry tools and materials.

With the object of minimizing the number of cable-laying gangs and uniformly stretching the cable, a new cable-laying apparatus was recently perfected by the Mead-Morrison Co., Cambridge, Mass., for a New England company, which is claimed to be a very large economy as compared with the construction means formerly used.

The equipment consists essentially of an underslung winch mounted at the rear end of the chassis frame, which leaves the truck deck clear, yet it is always instantly available. The winch has a pull of 5000 pounds and the drum will hold 425 feet of 7/16-inch wire cable.

With this a small truck may be used, which affords high speed and small turning radius, and it may be backed to a manhole, which is street area economy. The winch when in use may be operated by one man and the draft is so sensitive that the worker can tell by the "feel" whether or not there are obstacles in the conduit and this obviates the possibility of damage to the cable. The winch is driven by a take-off located on the transmission gearset case and the speed is varied by the gear ratios of the gearset.

Statement is made that the value of the equipment has been recognized by

numerous telephone and industrial companies that have need of this manner of construction, and there is probability that it will be very generally used.

MORE R. R. FREIGHT MILEAGE.

The most recent statistics available, though incomplete, indicate that the average daily movement of a freight car in August was more than 27 miles, while the loading of each car averaged more than 29 tons.

In February the average daily movement of an American freight car was 22.3 miles, in March it was 23.8 miles, April, the month of the yardmen and switchmen's strike, saw a drop to 19.4 miles per car per day. There was an increase in May to 24.2. In June it was 25 miles and in July 26.1 miles.

The average car loadings per day in February were 28.3 tons, March 28.3 tons, April 28.6 tons, May 28.3 tons, June 29 tons and July 29.6 tons.

The August averages are based on reports from about 40 per cent. of the total mileage of the country, and it is expected that the final figures will show even further improvement.

'BUS LINES CONSOLIDATE.

The Muskegon Jitney 'Bus Corporation has been formed with a capitalization of \$200,000 and has taken over all the 'bus lines operated in that city. All these lines have been successful financially and are popular with the traveling public. The service is expected to be still further improved through the consolidation.

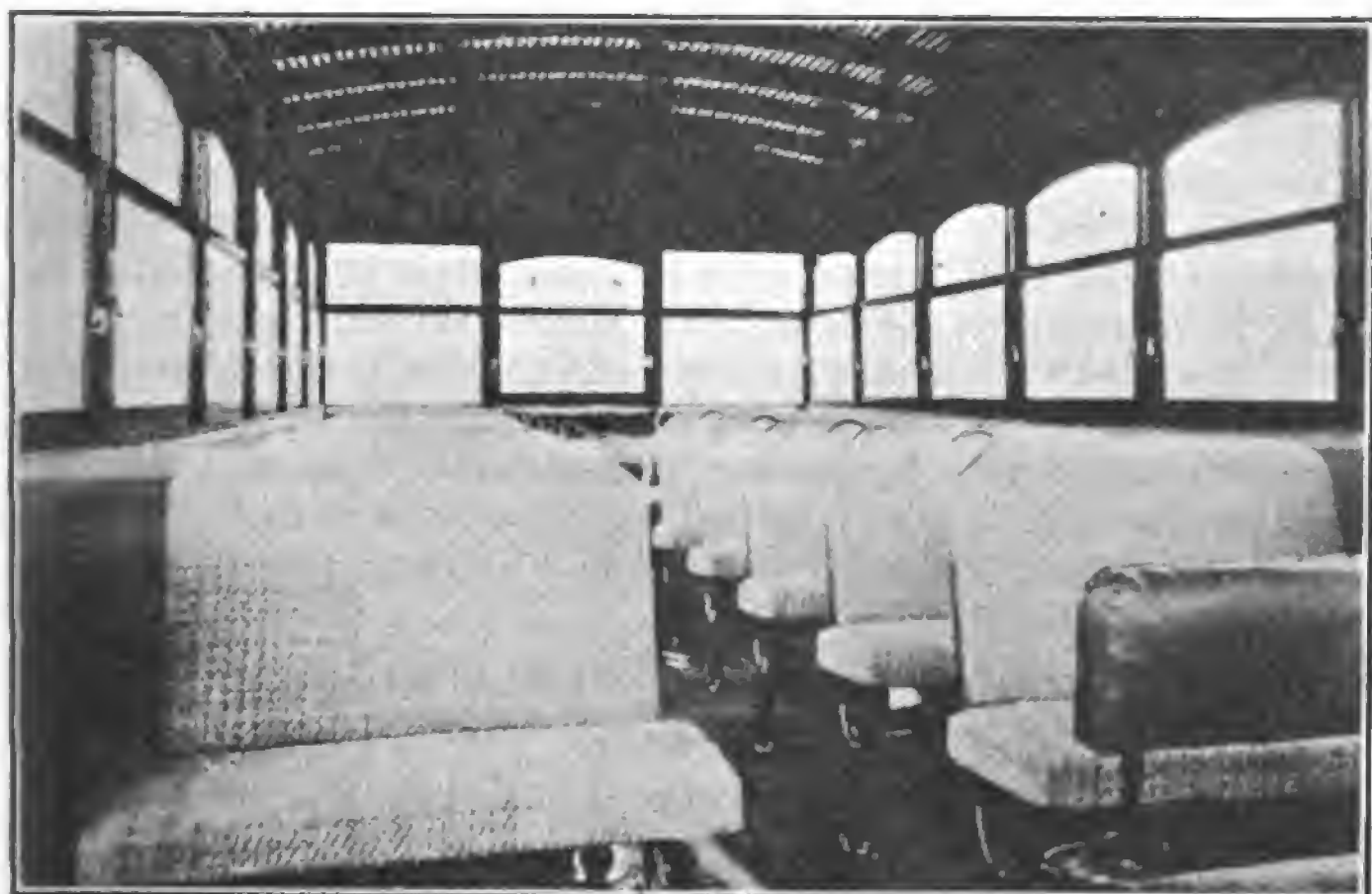
TRUCK AND TRACTOR MEETING.

The Chicago truck and tractor meeting of the Society of Automotive Engineers will be held at the Morrison hotel, Feb. 2, 1921. There will be sessions in the morning and afternoon and a dinner in the evening.



Winch-Equipped Truck for Underground Cable Stretching, in Service of a New England Company: At Left, Hauling the Cable Through the Conduit; at Right, Starting the Cable Into the Manhole.

SEEN FROM EVERY POINT OF VIEW



Interior of the Transit Style Passenger Omnibus Body, Showing the Arrangement of the Side Seats.

TRUCKS HAUL HALF MILLION TON MILES OF FREIGHT IN COLORADO TOUR

A half million ton-miles of freight were hauled free for farmers during a recent two weeks' demonstration tour of 750 miles by 20 pneumatically tired trucks under the auspices of the Rocky Mountain Trades association. The tour was developed by farm development experts of the Goodyear Tire & Rubber Co. As many as 25,000 Colorado farmers saw the truck demonstrated.

Farmers along the route were challenged to produce a hauling job the trucks couldn't handle. Farmers accepted the def—but couldn't "stump" the trucks, although the big freighters performed amazing hauling feats. For example, a two-ton truck, carrying a 2100 pound overload of coal, pulled up an 11 per cent. grade through blow sand, which no other vehicle had ever conquered. This performance won a bet of \$100 made by a farmer that the truck would fail.

Picking their way across ploughed fields with positive traction the powerful trucks carried big loads of grain from combines and threshers direct to elevators miles distant, performing in from one to three hours hauling jobs that would have taken horse teams a full day to accomplish. Live stock, lumber, coal, barley, rye, oats, wheat, potatoes, cement, shingles, plaster, kerosene and even church pews were transported between farms and railroad shipping points. In many cases loads handled by these trucks in a few hours over distances as great as 30 miles would have kept all the farmer's horse equipment busy for days.

Bad weather turned dirt roads into seas of slippery mud, but despite this handicap the motorcade maintained its schedule from county to county without losing a single truck. In addition it pulled out many touring cars that had

mired or slid off the road.

Cordial receptions were given the caravan everywhere and intense interest was shown by farmers in both actual demonstrations and in talks and motion pictures showing the advantages of pneumatically equipped motor trucks on the farm.

While a rule of the tour prevented the sale of trucks during a purely educational enterprise, more than 50 trucks were sold in the

wake of the motorcade.

TO STANDARDIZE PRODUCTION OF STEEL CASTINGS.

R. A. Bull, Pittsburgh, has been appointed consulting metallurgist for a number of prominent steel foundries grouped for the purpose of developing and perfecting higher standards in the production of steel castings. He is an authority in his field.

The members of the group are among the best known steel foundries in the country and include: Electric Steel Co., Chicago, Ill.; Fort Pitt Steel Castings Co., McKeesport, Pa.; Isaac G. Johnson Co., Spuyten Duyvel, N. Y.; Lebanon Steel Foundry Co., Lebanon, Pa.; Michigan Steel Castings Co., Detroit, Mich.; Sivyer Steel Castings Co., Milwaukee, Wis.

MAINE WARS ON BIG TRUCKS.

Governor Milliken of Maine is urging that the next Legislature pass legislation fixing fees on heavy trucks at such a high rate that all over a capacity of six tons be barred from the state highways.

TRANSIT STYLE BUS BODIES

ADOPTED FOR WINTHER

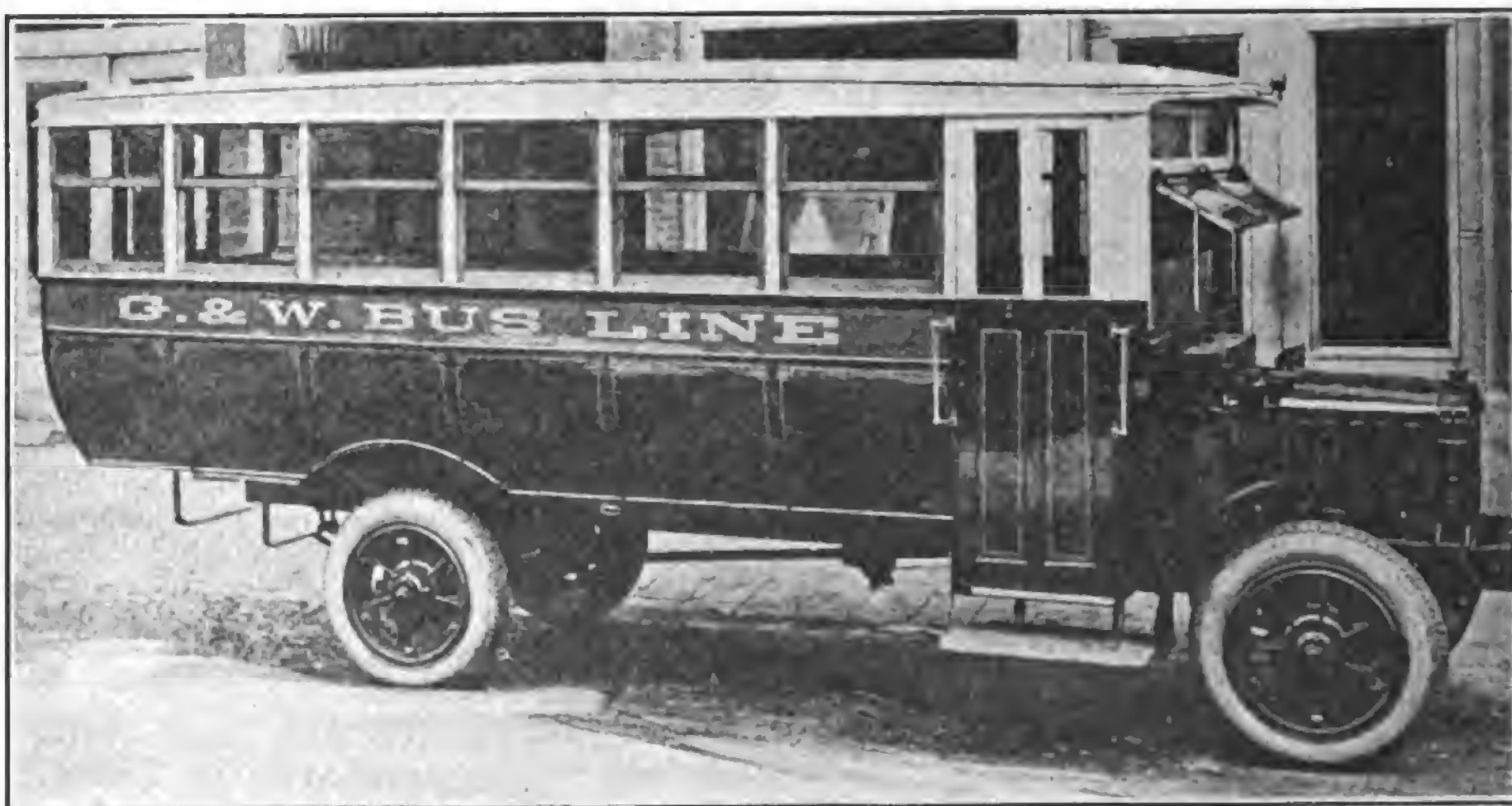
TRUCK CHASSIS

What is known as the Transit style of 'bus body has been adopted for general equipment for omnibus service by the Winther Motor Truck Co., Kenosha, Wis., this having been found to meet very satisfactorily the requirements for public transportation. The claim is made that the design has much to recommend it and as it is built in three capacities, 16, 25 and 35 passengers, differing only in dimensions, standardized vehicles are practically any requirement.

The accompanying illustration of the exterior of a Transit body is typical. It is 215 inches length from the dash to the rear end and it will hold 35 passengers, 25 seated and 10 standing. The interior arrangement of the seats is regarded as ideal, there being one longitudinal seat at the right side and a seat across the rear. At the left side are the five double cross seats and the individual seat for the driver.

The body has a grooved floor to insure drainage in the event of rain or snow melting, the windows are a noiseless type fitted with Pullman catches, and there are polished grip handles for the standing passengers. The entrance is through a vestibule with easy steps and a folding door. At the left of the driver's seat is a hand signal window and directly ahead of it is the gasoline tank, which is fully enclosed.

The illustration of the interior shows the arrangement of the combination seats in the Transit bodies, with open-bottom seat construction, affording space for packages and the grooved floor. The cross seats are well proportioned, with pressed steel Pullman pedestals, and on them are polished grip handles. The roof handles are covered with celluloid and are maintained to be sanitary. The driver's seat is the same construction.



Transit Style Omnibus, Entered at the Forward End, Mounted on a Winther Chassis—This Type Is Made in Three Capacities.

NEW ASSOCIATIONS AND ACTIVITIES

W. C. DURANT'S NEW POST.

President W. C. Durant of the General Motors Corporation, has been elected president of the recently formed Durant Corporation, which will interest itself in the distribution on a partial payment plan of municipal bonds and stocks of ably managed industrial corporations. For the time being the corporation is specializing in General Motors common stock, but it is said that it will be able soon to handle other securities.

The new corporation is not a subsidiary of or controlled by General Motors.

AYERS DEFIANCE MANAGER.

J. C. Ayers, a director of the Detroit Automobile Dealers' Association, has taken over the management of the Defiance Motor Truck Co., Defiance, O. Although he will devote most of his time to this work he will continue to direct the affairs of the Tower-Ayer Co., Denby distributors in Detroit.

SMITH BACK IN SELDEN FOLD.

P. H. Smith & Son have taken over the distribution of the Selden truck in the Aurora, Ill., territory, succeeding the J. C. Soensken Co. The younger member of the firm is D. Lloyd Smith, who was for a number of years prominently connected with the Selden home office at Rochester.

JORDAN A TRAFFIC MAN.

The Traffic Motor Truck Corporation, St. Louis, Mo., has appointed Bevan P. Y. Jordan, a veteran in the industry, as district manager for Eastern Pennsylvania, New Jersey, Delaware, Maryland, Virginia and West Virginia. He will have his headquarters at Philadelphia.

MOODY HOME AGAIN.

C. W. Moody, president of the U. S. Motor Truck Sales Corporation, which handles all the export business for the U. S. Motor Truck Co., Cincinnati, O., has returned from a trip through the continent and the British Isles.

NEW BOLLSTROM ENGINEER.

Joseph Jandasek, formerly tractor and truck engineer with the Paige-Detroit Motor Car Co., and also with the Plana Tractor Co., has been appointed chief engineer for Bollstrom Motors, Inc., St. Louis, Mich.

SPENCER IN NEW POST.

Western Motor Co., San Francisco, has engaged R. M. Spencer, a veteran of the truck industry, as truck sales manager. Mr. Spencer has been in charge of inspection at the Kissel factory for years.

BROWN SALES AND "AD" MANAGER FOR THOMART.

The Thomart Motor Car Co., Kent, O., recently organized for the purpose of manufacturing a quality truck of the "speed-wagon" type, has appointed P. D. Brown as general sales and advertising manager. He was formerly engaged in special sales work for the Liberty Motor Car Co., Detroit. He has been identified with prominent European motor car manufacturers and knows foreign markets and the export field thoroughly, in addition to being in close touch with engineering, production and sales work. He intends to promote a world wide distribution of the Thomart truck through domestic and foreign concerns of a character in keeping with the quality of his product.

The Thomart Motor Car Co. plans to be in production soon. The directing forces in the organization are men who have long been in the forefront of the industry, through their identification with the truck division of the International Harvester Co. These are President G. W. Thompson and Vice President and General Manager James L. Stewart. The addition of Sales Manager Brown rounds out an executive staff which ensures the success of the venture on which they are engaged.

The name Thomart comes from the "Thom" of Thompson and "Art" of Stewart.

CARTER SERVICE MANAGER.

The William C. Thomas organization, distributing Indiana trucks in Georgia and Florida, has appointed O. B. Carter service manager of its Tampa, Fla., branch. Addis Mathis, whom he succeeds, becomes assistant auditor at the home office at Jacksonville, Fla.

R. C. CHESNUTT RESIGNS.

Ralph C. Chestnut, designer of the engine used in the Bethlehem trucks, and formerly with the North American Motors Co., has resigned as chief engineer of the Bethlehem Motors Corporation, Allentown, Pa.

WHELDEN SELLING CARS.

C. M. Whelden, former president of the Wilson Motor Truck Sales Co. of New England has accepted a position as manager of Moon car sales for the Tri-angle Motors Co., 1084 Boylston street, Boston.

YOCOM TO U. S. AXLE CO.

The United States Axle Co., Pottstown, Pa., has engaged Alvin M. Yocom, formerly with the Bethlehem Motors Corporation, Allentown, Pa., as chief engineer.

A. A. FRANCK PROMOTED.

A. A. Franck, formerly with the Pioneer Truck Co., the All-American Truck Co., the International Harvester Co. truck plant and the Aluminum Castings Co., who has been comptroller of the Southern Motor Manufacturing Co., Ltd., Houston, Tex., has been promoted to the post of assistant treasurer. W. E. Hutchinson, manager of purchases for this concern, has opened a permanent office at 521 Book building, Detroit.

H. J. VOLGER RESIGNS.

H. J. Volger, who has been engaged for the past 15 months in organizing sales, service and advertising for the American Motor Truck Co., New York city, in the post of general sales manager, has resigned. Mr. Volger was formerly with the Maxwell Motor Co. as eastern manager and has also been wholesale manager for the Willys-Overland Co.

KISSEL GETS DAWSON.

H. Preston Dawson, general manager of the Youngstown, O., branch of the W. W. Martin Co., Pittsburgh, Pa., Republic truck distributors, has resigned to become general manager of the McKee Motor Sales Co., Atlanta, Ga., handling the Kissel cars and trucks in that territory.

NEW ARMLEDER DISTRIBUTOR.

The O. Armleder Co., Cincinnati, O., has awarded the Philadelphia distributing rights for the Armleder truck to the Fidelity Motors, Inc., which has 12,000 square feet of floor space at 4830-4 Market street. Everett Cummins is manager.

SHORT GMC ENGINEER.

Charles R. Short, formerly chief engineer of the Northway Motor & Manufacturing Co., Detroit, has accepted a position as engineer with the Dayton-Wright Division of the General Motors Corporation, Dayton, O.

PIKE LEAVES PAIGE.

Henry Krohn, general sales manager of the Paige-Detroit Motor Car Co., Detroit, Mich., is in charge of both truck and passenger car sales. C. S. Pike, vice president, in charge of truck sales, having resigned.

NEW POST FOR SWARTZ.

G. E. Swartz has been appointed manufacturing manager by the Timken Detroit Axle Co., Detroit. He was formerly mechanical superintendent with the Torsbensen Axle Co.

OF PLANT AND SALES PERSONNEL

M. B. JOHNSON DEAD.

Many in the industry mourn the loss of M. B. Johnson, chairman of the board of directors of the White Motor Co., Cleveland, O., who died in that city early this month, his funeral being held on the 14th. Mr. Johnson was an attorney and became affiliated with the White Sewing Machine Co. in 1886 and has been chairman of the White Motor Co. directors since the organization was founded.

WOOD IN ATTERBURY SERVICE.

The Atterbury Motor Car Co., Buffalo, N. Y., has secured Frank R. Wood, service manager of the H. J. Koehler Motors Corporation, Newark, N. J., for its service department.

BROWN-LIPE WESTERN MAN.

The Brown-Lipe Gear Co., Syracuse, N. Y., has named Gould Allen as western sales representative, with headquarters at Detroit.

SOUTHERN ADVANCES FRANCK.

The Southern Motor Manufacturing Association, Ltd., has promoted Comp-troller A. A. Franck to the post of assistant treasurer.

SEWARD WITH STERLING.

The Sterling Motor Truck Co. of New York city has engaged C. F. Seward as manager of sales for the Brooklyn, N. Y., branch.

N. E. MACK MEN MEET.

The New England organization of the Mack Motor Truck Co. had a get-together at the City club, Boston, early this month, which event was honored by the presence of President R. E. Fulton, A. F. Masury, chief engineer; B. C. Femere of the public works department; A. C. Fetzner of the general sales department and M. C. Horine of the engineering division. There were 75 Mack salesmen, branch managers and agents present. Moving pictures of the Mack factory in operation were shown. The affair was arranged by Norman Halliday, New England district manager, and Wilbur M. Maynard, Boston branch manager.

DREERS A GARFORD MAN.

The Memphis Overland Co., distributor for the Memphis, Tenn., territory for the Garford truck and several passenger cars, has engaged L. M. Dreers as sales manager.

RUESCHAW WITH GMC.

R. C. Rueschaw, who recently resigned as vice president of the Mitchell Motors Co., Racine, Wis., is reported to have accepted a responsible executive post with the General Motors Corporation.

KNOWLES SALES MANAGER.

The Cravens Motor Co., Kansas City, handling the Hurlburt truck and other automotive products, has engaged L. D. Knowles as sales manager.

AVAILABLE NAMES BLAHA ACTING SALES MANAGER.

The Available Truck Co., Chicago, Ill., has appointed William F. Blaha acting sales manager. He had been manager of the company's advertising and sales promotion departments, which he will continue to direct and supervise. He was formerly manager of the advertising and sales promotion departments of the Master Truck Co. and was also chief of the copy department of the Coolidge Advertising Co., Des Moines, Ia., where he came in touch with every angle of advertising.

NEW GARFORD ENGINEER.

The Garford Motor Truck Co., Lima, O., has appointed Walter J. Baumgartner as engineer. He was formerly chief engineer and general superintendent for the Duplex Engine Governor Co., Brooklyn, N. Y.

SELDEN PROMOTES GARVEY.

Thomas E. Garvey succeeds H. L. LeBland as a division sales manager for the Selden Truck Corporation, Rochester, N. Y. He will have his headquarters at Kansas City, Mo.

NEW PARRETT ENGINEER.

The Parrett Tractor Co., Chicago Heights, Ill., has engaged Ralph E. Cherry as engineer in its truck department. He was formerly chassis engineer with the Standard Steel Car Co., Pittsburgh.

TRUCKS IN FREIGHT HAULING.

The Travel and Transport bureau of the B. F. Goodrich Rubber Co. recently took a 24-hour census of the traffic over the Chicago-Hammond-Gary highway, during which 1079 trucks were counted. But 81 horse-drawn vehicles of any kind passed during that period. Any of these trucks could make the Chicago-Gary round trip in a day, while three days are required by rail each way between these points. These amazing figures are but one of the thousand daily indications of the rapid growth of the use of motor trucks for short hauls.

NEW INSURANCE SCHEDULES.

Insurance companies are drawing up new schedules of valuations for trucks on which the price has been reduced, this step being taken to prevent over-insurance.

TRUCKS IN COAL STRIKE.

The motor truck has again been called on to save the day in England during the progress of the coal strike, which affects 1,000,000 miners.

ECONOMY OF FARM TRUCKS FOR FARMING CREATES DEMAND ABROAD

The truck is becoming a big factor in farm work at points outside the United States, according to C. S. Thomson, export manager of the Four Wheel Drive Auto Co., Clintonville, Wis., who introduces an order just received for five FWD trucks from a ranch owner in the Argentine Republic to back up his contention.

These trucks will be used in Chubut, a province of Argentina, for handling the November crops. In order to get them speedily the purchaser ordered that no expense be spared. To ensure the vehicles reaching New York city in time to make a steamer leaving Oct. 5, the five power haulers were shipped by express from the Clintonville factory.

The order for the trucks, which called for stake bodies, was received at the factory in Wisconsin at 2 o'clock Friday afternoon, Sept. 24. By 7 o'clock the following morning the trucks had been mounted with stake bodies, special equip-

ment installed and ready for export.

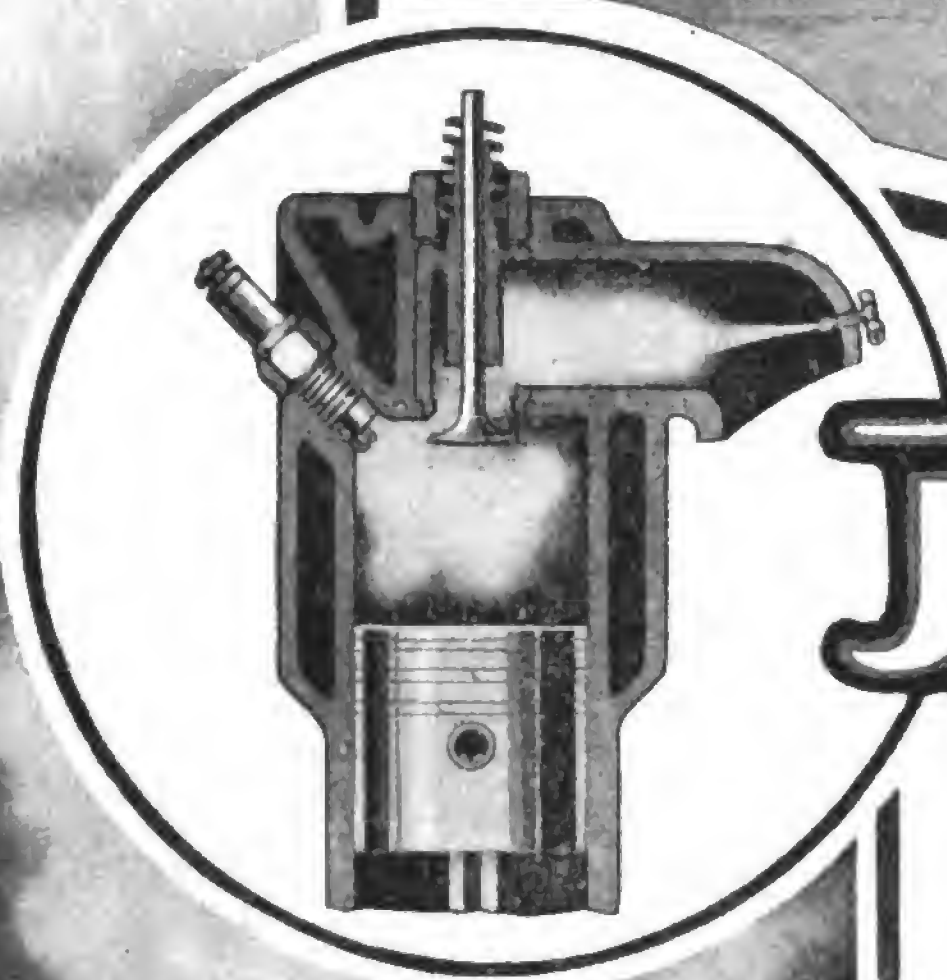
Agricultural departments of foreign countries are advocating trucks for farm work and their stand on this matter is bound to be reflected in increased orders for American products.

A BUSY TRANSPORT TRUCK.

One of the busiest trucks in the country is a model 50 Transport truck of 5000 pounds capacity, which is operated regularly between Lansing and Detroit, Mich., by the Hughes Moving Co. of Lansing. The truck carries a full load each way on one 18-gallon tank of gasoline, an average of 10 miles to the gallon. Furniture is moved from Detroit to Lansing and factory supplies are hauled the other way. All wasteful handling is eliminated, the truck delivering its cargo at the door of the customer.

TWIN CITIES UP TO DATE.

There are now 50 lines maintaining motor freight service out of St. Paul and Minneapolis, one of which runs trucks on schedule all the way to Fargo, N. D. These lines issue monthly tariff sheets and operate exactly like railroads.



JORGENSEN

VAPOR PRIMER

When Minutes Count

TO *pay*, motor trucks must *move*. Time lost in starting means money lost, schedules disrupted, delivery promises defaulted.

Equipped with the Jorgensen Vapor Primer a start is assured at the first or second quarter turn at any temperature or with any grade of fuel. Strictly mechanical in operation, this device is so simple that there is nothing to wear out or to cause trouble.

It performs its duty unfailingly and conserves time as well as preventing needless wear on the battery and starter. When the truck is not equipped with a starting system, it is doubly appreciated by the driver who must crank his motor for each start.

We suggest that you Jorgensen equip one of your trucks and by comparison see for yourself the saving in time and the elimination of trouble in starting which this device will effect.

We should like to mail you a booklet explaining the value of the Jorgensen Vapor Primer as an aid to economical truck operation.

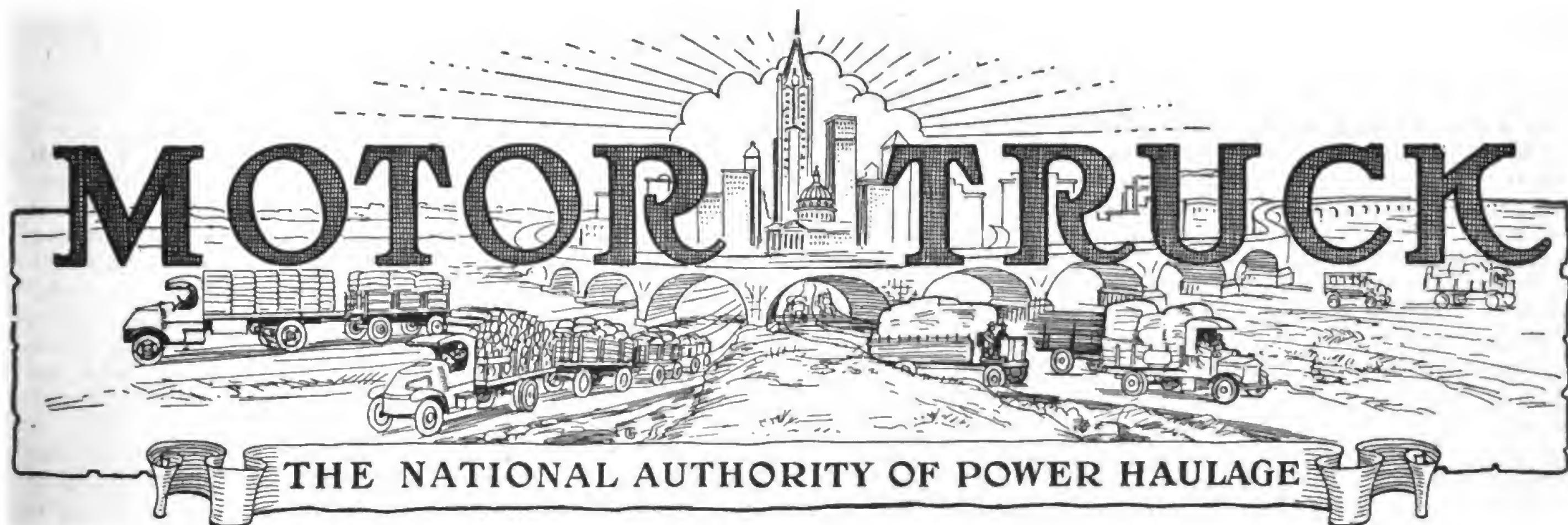
We manufacture a complete line of high-grade machined brass motor fittings—Sediment Traps, Pet-Cocks, Priming Cups, etc.; also Motor Tappets.

The Jorgensen Mfg. Co.

Waupaca, Wisconsin

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)





VOL. XI. NO. 11.

PAWTUCKET, R. I.

NOVEMBER, 1920.

PLAY IN YOUR OWN SAND PILE, SAYS HAULER WHO DID IT

MASSACHUSETTS FLEET OWNER FINDS WAY OUT WHEN BUSINESS IS SLACK—BUYS SAND PIT AND KEEPS TRUCKS AT WORK—WINS SUCH SUCCESS WITH PLAN HE NOW GIVES GENERAL HAULING THE GO-BY—AUTOMATIC LOADING EQUIPMENT PROMOTES ECONOMY AND EFFICIENCY.

FIVE trucks and a sand pit are the means by which Eugene L. Gobeille, Worcester, Mass., wrings a fat living from his daily battle with fate.

When the general hauling business started to go bad last spring Mr. Gobeille did not go flat on his haunches and rail at things. He just looked around for some means to keep his trucks busy and help swell the family exchequer. The sand pile looked like the right kind of an opening. He got it and is waxing rich. And there you are.

Mr. Gobeille has a few verbal hauling contracts. With one exception these are soft coal jobs. He accepts only general hauling in the few instances when he can spare a truck from the sand pile.

The Worcester man did not buy the sand pit. He is holding it for five years on a royalty basis. At the end of that time he has the privilege of renewing the agreement, but if business keeps up as it has to date he expects when the five years are done to enlarge the Lake-wood garage, 1147 Main street, which he recently purchased, and take matters easy for the rest of his days, the receipts

from the sale of sand and his truck operations up to that time, and the returns from the enlarged garage promising to allow him the leisure which his efforts, ability and judgment deserve.

The Gobeille fleet comprises four 3½-ton Seldens and a two-ton Federal. The latter has pneumatic tires all around and the others are on solids. The small-

the Selden dump trucks hauls coal for the concern, but the Federal does the rest, bringing in freight, going out and getting the raw wool and also delivering the finished cloth.

Three or four times a week the Federal goes to Franklin, Mass., where a load of raw wool is delivered to the Franklin Yarn Co. The spun yarn is carried as a return load. Franklin is 32 miles from Worcester, but the Federal makes the run of 64 miles both ways in a forenoon, doing 16 miles or more an hour over roads that are not always of the best.

All the soft coal which keeps the Auburn Worsted Co. and the Textile Leather Co. in operation are hauled by the Seldens, this being under a verbal agreement which has been in effect for



One of the Selden 3½-Ton Dump Trucks Which Eugene L. Gobeille of Worcester Uses in Turning a Sand Pile Into Gold Dust.

er truck has an express body and the four Seldens have dump bodies, with wood hydraulic hoists.

Does All of One Mill's Hauling.

The Federal is used mainly in the service of the George E. Duffy Manufacturing Co., manufacturer of woollen cloth, with which Mr. Gobeille has a two-year agreement to do all its hauling. One of

some time and seems likely to continue as long as Mr. Gobeille cares to do the work. These two manufacturing concerns are housed in the same big building, which proves convenient for the hauler.

Hauls 150 Tons of Coal in Day.

This hauling is done principally in the summer months. As many as 16 freight

cars of soft coal, each containing 50 tons, have arrived at the Jamesville freight yards over the Boston & Albany road for these firms in a day. The haul to the plants is not much more than a half mile. The Seldens, with some of them working only part time, have emptied three cars, totaling 150 tons, in a day. A conveyer is used by which one of these 3½-ton trucks is given its regular load of five tons in eight minutes.

Mr. Gobeille did not employ picker methods when he went into the sand business. He found the demand for trucking service rather skimpy this spring and a widespread cutting of rates against which he did not care to compete. In a survey of conditions by which he could keep his trucks at paying work he hit upon the sand pile, which is on Webster street, a mile and half from his home and from the nearby garage, which he has since purchased.

All Automatic Equipment.

Having acquired the rights to the sand deposits, which cover five acres, he went into the game in big league style. All equipment for loading and all other appurtenances for carrying on the sand business are automatic. He expended \$5000 in equipping the sand producing plant, this sum including an improved roadway from the street to the loading point.

The production capacity is 100 cubic yards of sand and gravel a day, the ratio being two to one in favor of sand. The sand brings from \$2.25 to \$2.35 a yard and the gravel from \$2.75 to \$3.25. This means an income of about \$250 a day when capacity is reached, which is most of the time. One day last month the Seldens delivered 125 cubic yards in a day. Contractors often send their own trucks after their sand, and there has been such a demand in spots that Mr. Gobeille has been forced to hire outside trucks. Right now business is so good that he is soon to place an order for a new five-ton truck.

Loads Three Trucks at Once.

To keep up production and utilize the trucks to greatest capacity the most modern equipment is at work in the sand yard. This equipment includes a 100-ton bin, with four compartments, a 16-foot screen, a 32-foot elevator and a digger or loader which conveys the sand to the elevator.

Three trucks may be loaded at once. Two can enter the driveway under the bin, chutes opening and dropping the sand into the trucks. The only hand work necessary is the leveling of the load, the sand usually piling up in the middle. From the time that the truck starts to back to the loading point until it is on its way out, fully loaded, not more than five minutes elapse. The third truck may be quickly loaded from the bank through the use of a conveyor. Three men are employed at the sand pile to keep production coming and to have everything ready for the loading. Of course, with the dump bodies and Wood hydraulic hoists the unloading process requires less than a minute.

As a matter of fact the capacity of the equipment to load three trucks at once is hardly ever tested. The schedule is so arranged that two trucks are seldom found at the pit at the same time. This programme makes it easier for all concerned, and yet when two or three trucks do happen to arrive at one time it is the height of efficiency to be able to get them all on their way again within five minutes.

Carry Loads of 5½ Tons.

Four cubic yards or about 5½ tons is the ordinary load for each of the 3½-ton Selden trucks. Three of them delivered 79 cubic yards, about 109 tons, of sand and gravel on a day taken at random from Mr. Gobeille's account books. In delivering sand to the Worcester Electric Light Co. for a recent big construction job an average day's work for one of the trucks was the hauling of eight loads to a point two miles away,

the truck traveling 2.32 miles in the day and hauling 32 yards or 44 tons.

The sand and gravel is sold to building contractors, to public utility concerns, to the city of Worcester and the State of Massachusetts. While building the Cherry Valley road this spring state highway officials submitted the sand from the Gobeille pit to a 27-day test, with highly satisfactory results. This sand and gravel is also being used by the state in constructing the Leicester road.

Mr. Gobeille, who had been an engineer on the B. & A., got his first truck, a Brockway, about four years ago. He bought it from a friend, who later severed his connection with the Brockway people. There was no Brockway distributor in Worcester then and the Gobeille truck was an orphan. When his friend took over the Federal agency Mr. Gobeille traded in his Brockway and bought a Federal. The latter truck served him well and faithfully for three years and four months, he getting his latest Federal in August of this year.

Seldens Fill All Demands.

Meanwhile his friend failed to harmonize with the Federal headquarters and he gave up his distribution rights, retiring from the truck field. This put it up to Mr. Gobeille to look around and find someone whom he could buy a good truck from and get along with. He got in touch with the Worcester distributor of the Selden and has no regrets.

In addition to getting everything out of his trucks that could be expected from any machine, he pronounces Selden service of the best. Outside of a collision in which one of his trucks figured his repair bills have been almost nil. Operating costs have also been unusually low. He got his first Selden two years ago this spring. Two of the four are 1920 models and he declares the latest Selden output to be his ideal of what a heavy duty truck should be.

Mr. Gobeille is glad that he found a way out of the general hauling business. That the way is paved with gold is naturally its brightest feature. He feels that there are other openings besides the sand avenue which the live truck owner can find to get in where the going is good. The low rates and cut-throat policy of many truckers make the hauling profession more or less of a hazardous occupation, he opines.

The moral is: Play in your own sand pile.

AN ACME FOLDER.

The Acme Motor Truck Co., Cadillac, Mich., has just issued a folder entitled *Making Money by Modern Methods*, which is interesting alike to users and prospective users of trucks. In addition to reproducing the latest Acme models, with body equipment, the folder gives specifications, contains data of what Acme trucks are doing in varied service and letters from owners voicing their satisfaction in the product and giving facts and figures to show why they are satisfied.



Selden 3½-Ton Truck Ready to Take Load Automatically, Showing Conveyors, Separator and Other Economical Automatic Equipment.

DISTRIBUTES TWO TRUCKS; MAKES ONE

TO DISTRIBUTE ACE TRUCKS FROM FINE NEW HOME IN NEW YORK CITY



E. Leindorf, President Equitable Motor Truck Co.

TRUCK TRAVELS 900 MILES ON THREE GALLONS OF OIL; TRIP MINUS TROUBLE

A Duplex Limited truck, owned by Knight & Rice, New Haven, Conn., took a big contract for its first long haul, going from New Haven to Montreal. A total of 900 miles was covered on three quarts of oil and with an average of 12½ miles to the gallon of gasoline. A load of furniture weighing more than two tons was carried.

The truck left New Haven on Saturday at 1:30 p. m., going at the rate of 22 miles an hour until Stockbridge, Mass., was reached, where the night stop was made. The truck set out at 6 a. m. Sunday, passing through Troy and Saratoga Springs, N. Y., and stopping for the night at Upper Jay, which point was reached at 9 p. m. This place was left Monday at 6 a. m. Through Plattsburgh and Rouses Point and then into Canada after the usual delays at the line. Montreal was reached at noon.

The return trip was started next morning and numerous stops were made along the way, all the sights being taken in. A hard rain storm was also encountered. The truck was back in New Haven Wednesday night at 8:30.

William Rice, one of the members of the firm, made the trip, and among his comments, was the following: We had no engine trouble and no tire trouble either way and the truck rode fine."

\$500,000 FOR ROADS MESSAGE.

The Federal Highway Council decided at its recent Akron, O., meeting to raise a budget of \$500,000 to spread before the American public the message of better roads.

In a handsome new building covering 40,000 square feet from 136th to 137th street on Madison avenue, New York city, and with a powerful executive and sales organization, the Equitable Motor Truck Co. has taken over the eastern distribution of Ace motor trucks. The new home of the Equitable is claimed to be the largest and most modern building devoted to the service and sales of motor trucks in the East. It is all on one floor, with sky lights giving abundant light and air.

E. Leindorf, president and general manager, has an enviable record in motor truck sales in and around New York city. He managed the New York branch of the motor truck division of the Studebaker corporation as assistant sales manager and for nearly four years was the retail sales manager of the Rainier trucks.

A. H. Mollenhauer, Jr., his sales manager, has been for more than seven years an expert designer salesman in the retail and wholesale truck field. He was with the Union Motor Truck Co. and vice president and treasurer of the Marvel Motor Truck Co. and has always been active in motor truck management. His service manager, Leonce Raboin, made the first water cooled motors for the Knox Motor Car Co., having been for seven years on its experimental staff. He had entire charge of the hundreds of motors and trucks of the Porto Rico Motor Transport Co. on the island of Porto Rico and was formerly the New York service manager for the Rainier trucks.

Putnam Drew, for 25 years a writer on automotive topics and advertising manager of notable motor truck concerns, is in charge of the advertising and general publicity work.

Mr. Leindorf also heads the Leindorf Motor Sales Corporation, which has the same organization, and which in addition to dealing in Ace trucks, also handles the Signal and is also to manufacture a truck of its own, the Lion. The Lion motor truck will be confined to a three-quarter-ton model, but anyone wishing a larger size can have it in either of these trucks, the Ace or the Signal.



The Above Is the Design of the New Slogan, "Truck by Trailer," Recently Adopted by the Trailer Manufacturers' Association, with Headquarters at the Grand Central Palace, New York City.



A. H. Mollenhauer, Jr., Sales Manager, Equitable Motor Truck Co.

KELLY-SPRINGFIELD TRUCK CO. IS TAKEN OVER BY HARE'S MOTORS

Emlen S. Hare, president of Hare's Motors, Inc., announces that the Kelly-Springfield Motor Truck Co. and its big plant at Springfield, O., will hereafter be operated by Hare's Motors, the operating organization for the Locomobile, Mercer and Simplex companies. Both the Kelly-Springfield and the well known Riker truck will be manufactured at the Springfield plant and only Locomobiles will be produced at Bridgeport, Conn., where the Riker has previously been put out. The Riker comes only in three and four-ton sizes, while the Kelly-Springfields run from 1½ to 6½ tons.

Coincident with Mr. Hare's announcement comes the word that the board of directors of the Kelly-Springfield Motor Truck Co. has elected the following officers: President, Emlen S. Hare; vice presidents, Henry Lansdale, H. D. Church and O. E. Hunt; secretary and treasurer, F. R. Hickman. These men now hold the same respective positions in Hare's Motors, the Locomobile Company and the Mercer Motors Co. James L. Giddes, who has been president of the Kelly-Springfield company, was elected chairman of the board. Messrs. Church and Hunt are former Packard engineers.

The Kelly-Springfield is one of the oldest trucks built today, having been on the market 16 years and seen many competitors come and go. Years ago it won a place among the leaders as a unit of proven excellence of construction and economical and efficient operation. During the war the Kelly-Springfield plant was greatly enlarged and given over entirely to war contracts, its commercial business being temporarily abandoned.

TRUCKS AND TRACTORS MUST OFFSET REDUCTION IN EASTERN FARM AREA

A striking feature of the census bureau report this month showing that the number of farms are decreasing in the East is the outstanding fact that the farm is getting further and further away from the industrial center, which means that the sources of food crops are becoming more remote from the areas of congested population where factories flourish.

The figures and facts of the report suggest the remedy, which is motor power. The tractor, to multiply the supply of food and thus offset the fewer farms as against the population increases. The truck to bring the farm and the city together and open and make new areas productive.

From 1910 to 1920 the number of farms in the United States increased only 1.4 per cent. against 10.9 per cent. in the period from 1900 to 1910. In 1920 there are 6,449,998 farms in the United States, while there were 6,361,502 in 1910 and 5,737,372 in 1900.

But what is more remarkable is that in 24 states, or just half of the total number of states, the number of farms actually declined in the past 10 years. The reduction was particularly marked

in New England and in all industrial states, and apparent in the Middle West.

On the other hand, there were marked gains in the Far West and some parts of the South, the greatest advance being in the irrigated states of the Far West.

States in which the number of farms have decreased in 10 years with the decrease set forth in percentage terms follows:

State	Number of Farms 1920	Number of Farms 1910	Decrease P.C.
1. New Hampshire.	20,523	27,053	24.1
2. Rhode Island....	4,084	5,292	22.8
3. Maine	48,228	60,016	19.6
4. New Mexico....	29,841	35,676	16.4
5. Connecticut	22,655	26,815	15.5
6. Massachusetts ..	31,982	36,917	13.4
7. New Jersey.....	29,672	33,487	11.4
8. Vermont	29,072	32,709	11.1
9. New York.....	193,060	215,597	10.5
10. West Virginia...	87,289	96,685	9.7
11. Pennsylvania ...	202,256	219,295	7.8
12. Kansas	165,287	177,841	7.1
13. Delaware	10,128	10,836	6.5
14. Dist. of Columbia	203	217	6.5
15. Illinois	237,153	251,872	5.8
16. Ohio	256,699	272,045	5.6
17. Missouri	263,124	277,244	5.1
18. Michigan	196,647	206,960	5.0
19. Indiana	205,124	215,485	4.8
20. South Dakota....	74,564	77,644	4.0
21. Alabama	256,023	262,901	2.6
22. Nebraska	126,309	129,678	2.6

23. Maryland	47,908	48,923	2.1
24. Iowa	213,312	217,044	1.7
25. Mississippi	272,437	274,382	0.7

In the following is set forth the farm statistics on the states of the Far West and South, in which the number of farms increased in the last 10 years:

State	Number of Farms 1920	Number of Farms 1910	Increase P.C.
1. Montana	57,441	26,214	119.1
2. Wyoming	15,611	10,987	42.1
3. Idaho	42,109	30,807	36.7
4. California	117,690	88,197	33.4
5. Colorado	59,991	46,170	29.9
6. Utah	25,664	21,676	18.4
7. Washington	66,288	56,192	18.0
8. Nevada	3,164	2,689	17.7
9. Arizona	10,816	9,227	17.2
10. Minnesota	178,588	165,137	14.4
11. Louisiana	135,455	120,546	12.4
12. Oregon	50,188	45,502	10.3
13. South Carolina...	192,664	176,434	9.2
14. Arkansas	232,602	214,678	8.3
15. Florida	54,006	50,016	8.0
16. Georgia	310,737	291,027	6.8
17. Wisconsin	189,196	177,127	6.8
18. North Carolina...	269,740	253,725	6.3
19. North Dakota...	77,693	74,360	4.5
20. Kentucky	270,676	259,185	4.4
21. Texas	435,666	417,770	4.3
22. Tennessee	252,691	246,012	2.7
23. Virginia	186,011	184,018	1.1
24. Oklahoma	191,731	190,192	0.8

FWD TRUCKS IN SUMMER AND WINTER



Doing Their Part in the Recent Colorado Truck Development Tour.



Pushing Plow Through Wisconsin Drifts—Notice That the Horses Are Relegated to the Rear.

What the Motor Vehicles of the Midwest Refining Co., Caspar, Wyo., Faced Last Winter.

Business for the Go-Getter

THE silver lining to the clouds which have hung over the truck industry is in sight. Transportation is too vital a part of national progress to be long hampered by general unsettled conditions. The call for trucks is coming stronger every day and only lacks the backing of correct salesmanship, right advertising and a generous supply of elbow grease to be as loud as ever. The truck industry can jump from reverse into high over night with a country wide rallying of interests.

The nation cannot go along unless products of industry and the soil are distributed. This job is beyond the railroads and will be too big a proposition for the railways and waterways to handle for many a day. The motor truck must be used because of lack of adequate transportation agencies. Thousands of shippers have been taught that this medium is best for their demands, because of speed, direct delivery, minimum handling and other admitted advantages over rival haulage facilities.

The halt in production is going to be the industry's chief benefactor at an early day. With the election over and the stabilizing of conditions that the first of a new year always brings, general business is going to hit its stride again in a few months, probably weeks. Consumption is going to catch up with depleted production and pass it. This means that the factories will begin to hum. The turning of the mill wheel calls for the turning of the truck wheel.

In the spring, at the latest, there is going to be a demand for trucks which the lowered production cannot supply. The truck business is going to be better than ever then. Maybe this clamor for motor power haulage will come sooner. It can be hurried if the truck industry will meet it half way. This can be done by realizing that the dealing out of trucks is no longer a favor or an act of charity. Trucks must be **SOLD** now, the same as other articles. They must be **SOLD** by the usual selling methods for other commodities. These are salesmanship, advertising and hard work.

The distributor must get out the dust-covered business directory, must brush up on letter writing, try some new advertising stunt, and, most important of all, must actually put his salesmen at work. Reducing the number of salesmen is no economizer. A wider field of prospects must be seen. This means more rather than less salesmen. Where what little driving that has been done has centered on the fleet owner, attention must be given the buyer of a single truck. The latter has only been a little fellow for a year or

two but, properly nursed, he has always had room to grow.

The farmer is always with us. There is plenty of untilled land in every section of the country. The farmer is anxious to enlarge his holdings and grow bigger crops if he can be shown that the truck will speed up his operations and help solve his labor problem. Show him where he can cultivate more land and reap bigger profits at nominal expense and you will find him a business man of the progressive type.

Many distributors have not found time to cultivate the farmer trade. They cannot plead that excuse now. Government figures and other reliable data prove the farmer to offer a greater potential market for trucks than any other field. This, the country's biggest industry, could absorb all the trucks now in production if the possibilities of power haulage were rightly presented. Do it now.

A glance back at the panic of 1917 and at certain phases of the war crisis and a peek at the situation today convinces that conditions are not chaotic. In the State of Massachusetts last month 1198 trucks were registered. This was 219 more than in the previous month of September and but 171 less than the busy month of August. For the same months during the record year of 1919 the registrations were: August, 1895; September, 1331; October, 1616. These figures do not indicate that the bottom has fallen out of the industry.

Massachusetts is an industrial state. Much of its manufacturing is in the textile line, which has been particularly hard hit. It is a shoe center and the shoe business has been dealt a hard blow. There is no state in the union which has felt the industrial slump keener. If the truck distributor could weather the gale in that state he could do it anywhere.

The best indication that the truck industry is looming up in this state is the acknowledged loosening of purse strings by bankers. Credits of \$50,000 to \$100,000 have been freely extended to Boston distributors within a week. In the city of Worcester a truck dealer accepted a wager that he could not borrow \$10,000 at a local bank. When he made his request for the loan he put the figure at \$15,000, expecting a cut. He was dazed when the banker handed over the \$15,000 without a whimper.

What is true of Massachusetts is true everywhere. The signs show that there is business if it is gone after in a business way. Hustling salesmanship, straight-out advertising and a hewing to the line will get it.

Truck Prices

Truck manufacturers are still wrestling with the price problem, the majority guaranteeing present prices until stipulated dates. A few have raised prices. One or two have made cuts.

The latest prices of the Clydesdale Motor Truck Co., Clyde, O., follow: Model 32x, advanced from \$2185 to \$2375; model 42, \$2445 to \$2750; model 65x, \$3175 to \$3540; model 90, \$4075 to \$4400; model 120b, \$4975 to \$5500.

The Traffic Motor Truck Corporation, St. Louis, Mo., has added \$100 to the price of its model C, the new figure being \$1595.

The Defiance Motor Truck Co., Defiance, O., has made an advance of \$100 on both its 1½-ton and its two-ton models, the new prices being \$2550 and \$2750 respectively.

The Kankakee Automobile Co., Kankakee, Ill., has increased the price of its 2½-ton model from \$2875 to \$3175.

New prices announced by the Rainier Motor Corporation, New York city, follow: One-ton model, \$2350; 1½-ton, \$2600; two-ton, \$2950; 3½-ton, \$4400. These prices are guaranteed to May 1.

The Dependable Truck & Tractor Co., Galesburg, Ill., announces the following new price list: 1½-ton model, \$2350; two-ton, \$2650; 2½-ton, \$2950; 3½-ton, \$3550.

The Larrabee Deyo Motor Truck Co., Binghamton, N. Y., sticks to its price schedule of May 1, which follows: 1½-ton model, \$2400; 2½-ton, \$3400; 3½-ton, \$4200; five-ton, \$5100.

The following manufacturing companies have made price guarantees to the dates named:

Available Truck Co., Chicago, July 1; Bethlehem Motors Corporation, East Allentown, Pa., June 1; Signal Motor Truck Co., Detroit, Jan. 1; Fulton Motors Corporation, Farmingdale, N. Y., July 1; Walter Motor Truck Co., New York City, June 1; Norwalk Motor Car Co., Inc., Martinsburg, N. Y., March 1; H. J. Koehler Motors Corporation, Bloomfield, N. J., April 1; Hoover Wagon Co., York, Pa., Jan. 1; Corbett Motor Truck Co., Henderson, N. C., June 1; Brinton Motor Truck Co., Philadelphia, March 1.

PICK TRUCK DRIVERS THE SAME AS LOCOMOTIVE ENGINEERS.

"Motor Trucks" are not "Automobiles" or "Automobile Trucks," says H. W. Acason, president of the Acason Motor Truck Co., Detroit, Mich. "They are pieces of machinery. Their nearest relation, the railroad locomotive, nobody ever thought of comparing with an automobile. Some day we hope truck owners will realize this and give the truck something of the same care, inspection and treatment that the locomotive has always received. If truck drivers would be selected with the same care as locomotive engineers, the proposition of successful truck operation would never have to be called a problem."

PAIGE COMPANY EXPANDS ITS TRUCK DIVISION; CONLON MANAGER

The Paige Detroit Motor Car Co., which is rapidly expanding its truck business, has made a move in the right direction by appointing Harry A. Conlon as sales manager of the truck division. Mr. Conlon is a former director of the Acason Motor Truck Co. and has an organization and retail sales experience of 10 years in the industry.

The Paige Co. is to enlarge its plant facilities, and has engaged a staff of seasoned haulage experts to conduct an extensive educational and sales campaign. A thorough survey of the farm field and the rural express business will be made, the distributing organization will be en-



Harry A. Conlon, Veteran in Industry, Heads Paige Truck Division.

larged and every effort made to put the truck division of this company on the same high plane which has already been reached in the passenger car field.

ACMES IN PUBLIC SERVICE.

The Acme Motor Truck Co., Cadillac, Mich., has been getting good reports from communities where Acme trucks are being used in state or municipal service. Some of these trucks are used in highway construction and others in hauling garbage and similar jobs.

The State of Oregon hauls supplies to the State Institution for Feeble Minded in a two-ton Acme. This truck was bought over a year ago and at last report had gone without any repairs except those of a very minor nature. Wells county, Indiana, which operates three Acme trucks; the township of Fayal, St. Louis county, Minn., and the village of Palmyra, N. Y., are widely separated points where Acme trucks are saving money for their operators in highway work. The city of Lethbridge, Alberta, Can., replaced five teams with a two-ton Acme in hauling garbage, and is getting better service.

The Trade in Evil

C. H. Corey, manager of the Metropolitan Dealers' Motor Truck Exchange, Inc., 144 West 65th street, New York city, in commenting on an article in the October issue of MOTOR TRUCK entitled, "Standardization of Sales Ethics for Dealers and Salesmen," calls attention to the fact that New York city also has a system at work which is successfully combatting the trade-in evil. This work was definitely started Feb. 1 of this year after over a year of preparation. Since February Chicago and Buffalo have perfected organization along the same line. As stated in the article Philadelphia is also making ready to get together in a war on this setback to the industry.

In New York Manager Corey and his assistants appraise a truck offered in a trade-in, the charge for a member being \$5. The valuation is "as is" and an estimate of the cost to place the truck in selling condition is also given. If another member wants an appraisal of the same truck he is told about the former appraisal and the date thereof. If he asks for a new appraisal it is made, the first member also being notified. The valuations are checked up by several inspectors so that their accuracy may not be doubted.

The work is carried out with every intent not to hamper members in their legitimate work of selling trucks. In the first six months of its existence the exchange made over 1000 appraisals and has been uniformly told that its work has saved money for the dealer. The entire aim is to eliminate cut-throat methods by which a dealer will sacrifice his profit in taking a trade-in truck in order to beat out a rival in the sale of a new one.

PARLIAMENT ADJOURNS TO SEE TRUCK IN MOVIES.

R. W. Pachaly, representing the foreign export department of the Four Wheel Drive Auto Co., Clintonville, Wis., recently displayed a fine bit of Yankee enterprise when he brought about the adjournment of an official session of the Parliament of Perth, West Australia, for an hour to allow the legislators to witness a demonstration of the FWD truck in movies.

The film was the first ever shown in the Parliament house. Among those present were such prominent officials as the premier, the minister of public works, minister and commissioner of railways, minister of agriculture, as well as the members of Parliament.

Mr. Pachaly also addressed the assembly and told how large business houses and municipalities in the United States were using motor trucks in the conduct of their business. According to advices from Mr. Pachaly the film aroused considerable interest and brought on a general discussion of motor transportation, during which he was asked numerous questions.

MOLINE MODEL 1½-TON TRUCK

WITH the object of offering to farmers a series of equipment for agricultural operations by power, the Moline Plow Co., Moline, Ill., has begun the production of trucks especially designed for farm use. The intention of the company is to manufacture a series of these machines, but the first size to be produced is rated at 1½ tons load capacity and it is designed model 10.

The company builds Moline farm tractors in two sizes, for general field work and for orchard cultivation, and a series of implements for use with tractor power, and the truck design has been harmonized so far as is possible with that of the tractors, so that the company can simplify its service department and at the same time serve all owners satisfactorily.

Experience has proven that farmers would prefer to purchase all equipment from one manufacturer provided that the same standard of operating efficiency is obtainable, from the fact that with one source of service the results are generally believed to be more dependable and reliable, for a concern that must of necessity afford service can have a larger and better organization with the increase of owners and machines that must be given attention.

Will Have Complete Farm Equipment.

The Moline Plow Co. builds tractors and implements in large volume and it has a selling department in all parts of the country. The intention is to market the trucks through dealers already established, which will considerably increase the scope of their operations and undoubtedly attract to them as buyers farmers who now own or who may later purchase tractors and farm machinery.

Statement is made by the company that the design for the model 10 truck has been developed carefully and determined after a period of experimentation extending over many months, and that production was started Oct. 1. The company expects to build the machines in large numbers—at least sufficient to meet any demand.

Claim is made that in service in different parts of the country, especially in the Southwest, the trucks have been proven to be extremely economical and that they have in every way met expectations of the engineers. The engine is the same type and size that is used in the Moline tractor, which affords a large degree of interchangeability of parts and minimizes the service and parts that must be carried by the company, distributors and dealers.

The engine is a four-cylinder, water-cooled, I-head type, with cylinder bore of 3½ inches and stroke of five inches, that is rated by the S. A. E. formula at 19.60 horsepower, but which will produce considerably in excess of this rating. The cylinders are cast en bloc with the large water jacket integral, and the head is a separate casting with generous water chambers. The pistons are fitted with three rings each. The crank case

is two section, the lower containing the oil reservoir.

The crankshaft is an alloy steel drop forging that is a two-journal type, 2½ inches diameter, and the bearing length is 5¼ inches. With the large diameter and the short shaft there is no possibility of the shaft whipping. The shaft is heat treated and ground to size.

The engine is lubricated by a force feed system, the oil being drawn from the reservoir by a gear pump and forced to the main and crankpin bearings and timing gearset, and distributed by splash and throw-off to all other moving parts.

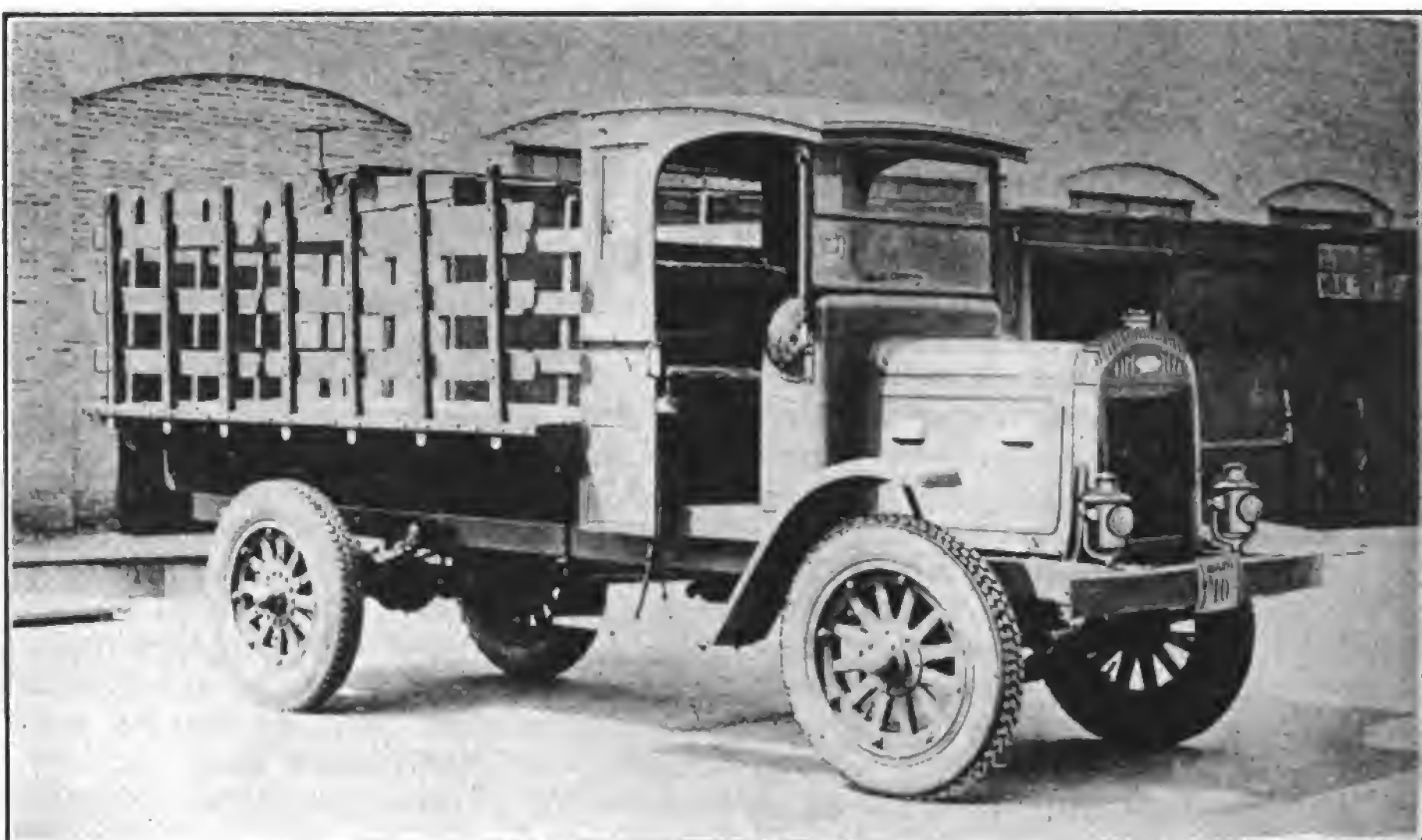
The Engine Auxiliaries.

The engine is cooled by a thermo-syphon circulation of water through the cylinder jacket and a large radiator, constructed with cast top and bottom tanks. The cooling section is so constructed that it may be removed without dismantling the radiator or the tanks. Radiation is promoted by a belt driven fan

tire pump and from it an odometer located on the dash is driven. The entire engine is suspended at three points in the chassis frame, at the forward end on a trunnion and at the rear by arms bolted to the side members. The engine is covered by a pressed steel three-piece hood.

The drive is by a single tubular shaft with a universal joint at either end to the rear axle, which is an internal gear construction. The frame is pressed steel channel section, strongly reinforced and gusseted and at the forward end is a heavy bumper. The frame is suspended on chrome vanadium semi-elliptic springs that have bushed eyes and the bolts are hardened and ground. The wheels are shod with pneumatic cord tires.

Much care has been taken to protect the parts in moving contact from abrasive action of dust. The engine is completely enclosed and the chassis is



The New Moline Model 10 1½-Ton Truck Chassis, Designed Especially for Farm Use, Equipped with Pneumatic Tires and a Platform Rack-Side Body.

mounted on a bracket that is lubricated by pressure supplied from the engine system. The speed is controlled by an automatic mechanical governor.

The fuel is supplied through a standard automatic float feed carburetor and the source of the ignition current is a high-tension magneto equipped with an impulse starter. When desired the truck can be fitted with electric lights, generator and starting motor as extra equipment.

Power Transmission System.

The clutch is a dry plate construction that is self-compensating and requires practically no attention aside from lubrication of the throw-out collar. The transmission gearset is a selective sliding gear type that has three forward speed ratios and reverse, with large shafts and wide faced gears, the shafts being mounted on substantial bearings. The gearset case is designed to installation of a power take-off which is furnished as an extra, and it is fitted with a driven

equipped with a system of lubrication by which the grease is forced under high pressure to all bearings and joints. The equipment includes driver's seat, heavy pressed steel fenders, running boards, rubber bumpers, tire carrier on the running board, towing hooks on the frame, screw-type jack and a complete set of tools.

The chassis can be provided with a power take-off that may be operated by the driver from the seat and either a 12-inch pulley or a chain sprocket can be fitted as required by the purchaser. The control of the truck is to conventional practise.

Despite comparatively recent development pneumatic tires are now installed on 375,000 trucks. The fact that 275,000 trucks are running on solid tires indicates that this and the cushion type will always have a field where traction and cushioning powers are not considered important.

PIERCE-ARROW BUS TWIN OF STREET CAR

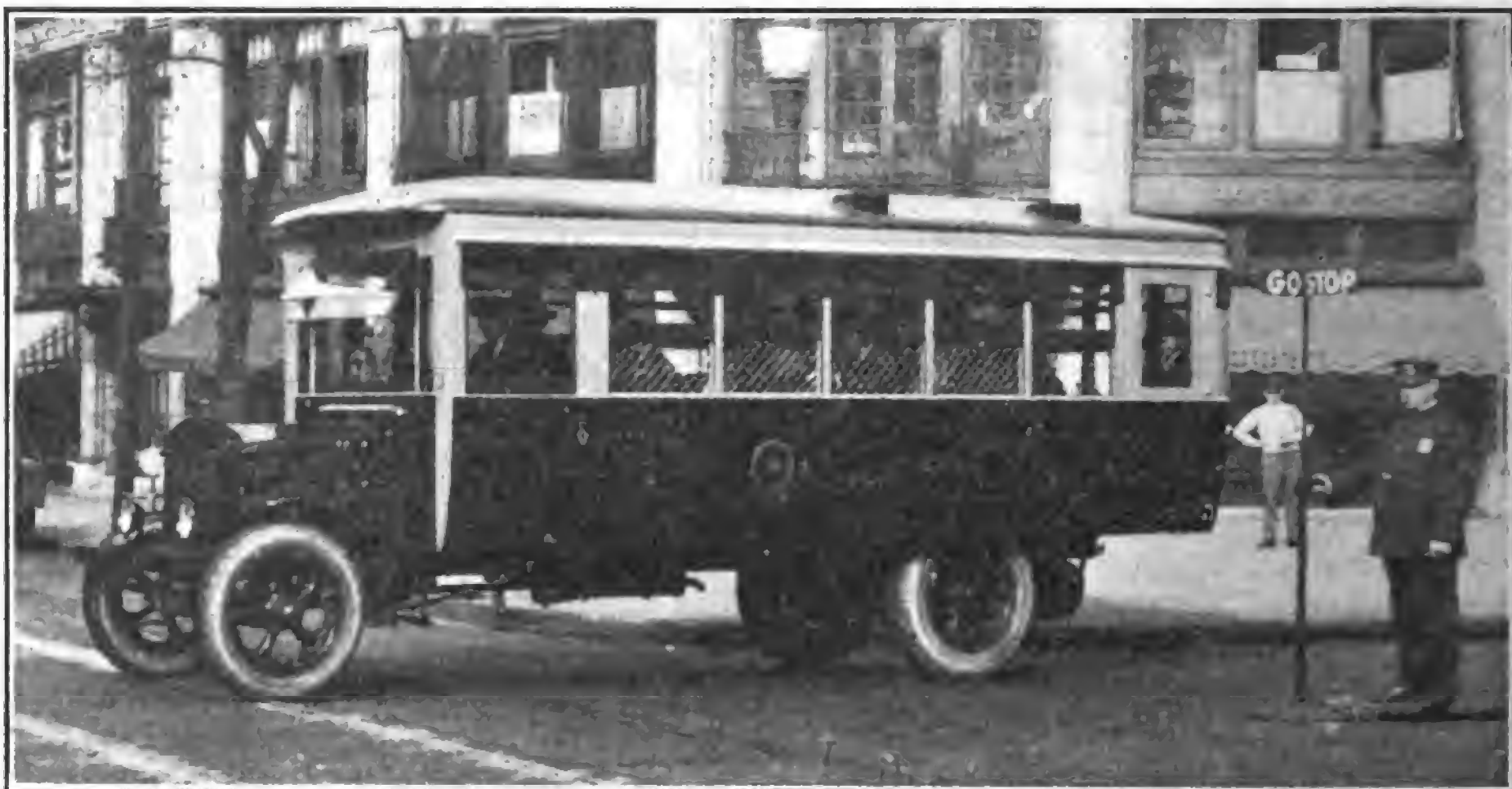
Described as a brother to the modern street car, and designed with a view to solving the street car problem, the Pierce-Arrow Co.'s new type motor 'bus, recently put into active service in Buffalo, is attracting much favorable attention. It is mounted on a Pierce-Arrow two-ton dual valve chassis equipped with large pneumatic tires, and seats 25 people comfortably.

The artistically designed steel body is fitted with all the known safety devices and modern conveniences, including electric lights, push buttons, heating system, and window screens and shades. The riding qualities may be compared to those of a Pullman coach, and the windows are so designed as to give passengers and driver a clear vision at all times. It can attain a speed of 25 miles an hour with ease, and has been found to handle well in traffic. Commodious though it is, the impression of bulkiness is lacking, and its construction conforms to state and city regulations.

"Because a number of electric railway companies already have augmented their regular equipment with fleets of motor 'buses, traction authorities are watching with interest the development of this vehicle," says Robert O. Patten, truck sales manager of the company.

"The electric railway industry has come to regard the motor 'bus as an ally; not as a competitor. The 'bus enables the electric railway to give service in newly opened sections without going to the enormous expense of laying tracks and investing in new rolling stock. It likewise can be used to relieve the heavy passenger traffic burden during rush hours. By running the 'buses on streets paralleling the trolley streets, congestion is avoided and the electric cars make faster headway.

"In cities where trolley companies have added motor 'buses to their equip-



New Type of Motor 'Bus Mounted on Two-Ton Pierce-Arrow Dual-Valve Chassis—Has Latest Safety Devices and Pneumatic Tires—Seats 25 Persons.

ment, experience has shown that the 'bus service is comparable in headway, speed, fare and transfer privilege and economy of operation with the trolley service."

PIONEER TRUCK PLANT.

The Pioneer Truck Co. is all ready to start work on its new plant at Valpariso, Ind., awaiting only action by the Chamber of Commerce as to which of four 10-acre sites are to be selected. Specifications have been drawn and plans completed. Six units, 100 by 300 feet, are proposed. Production will be started when the first unit is completed. As each unit is finished another will be begun. The buildings will include a foundry and power plant. It is anticipated that nearly 1000 workers will be employed. Otto M. Freier is president and Richard Vogel secretary of the Pioneer Truck Co.

AUTOMOTIVE OFFICIAL INDORSES HORSE PROPAGANDA.

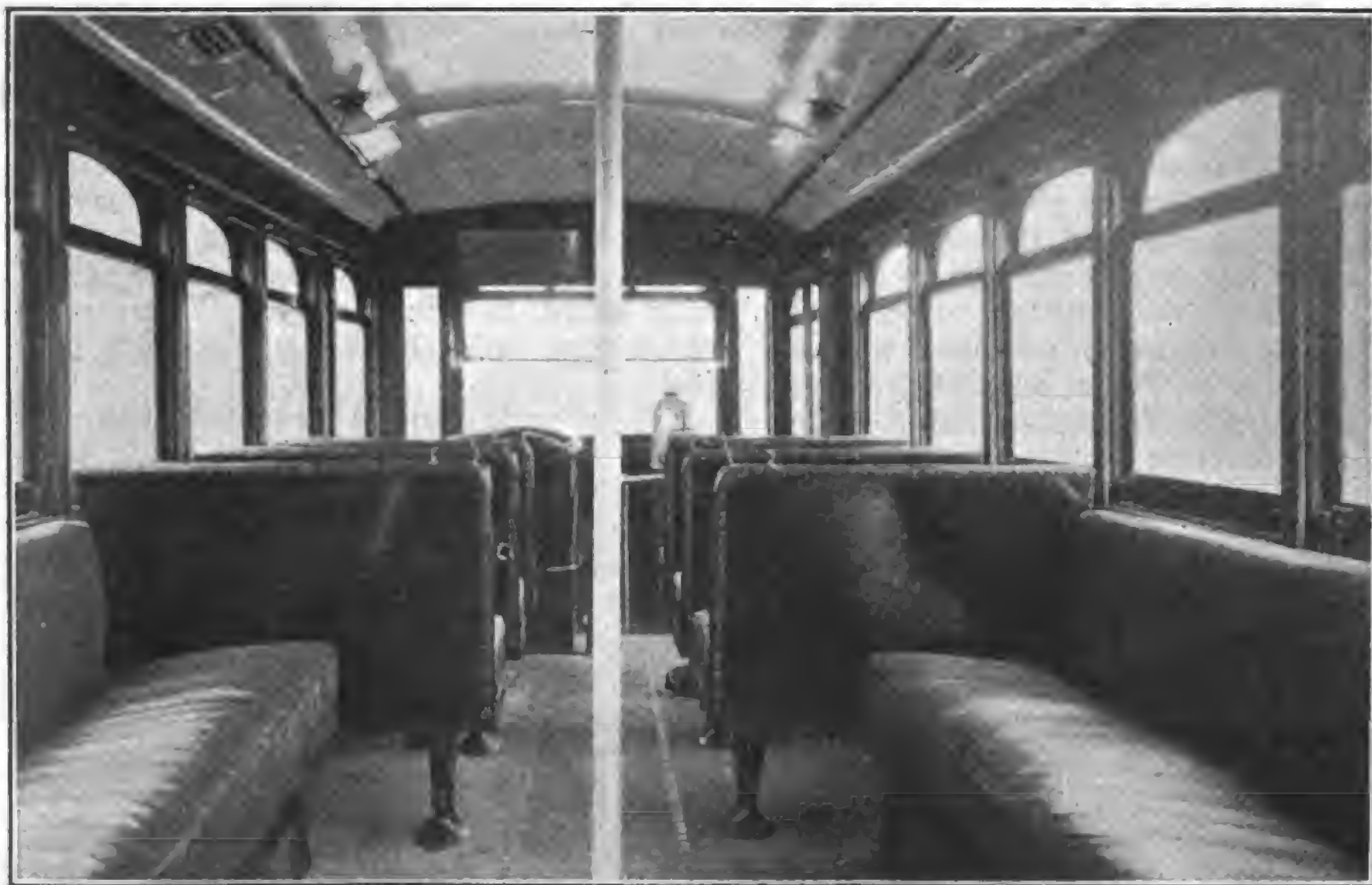
Lon R. Smith, general sales manager of the Midwest Engine Co., Indianapolis, Ind., which concern manufactures engines in bulk, as well as the Utilitor tractor, thinks highly of the horse—when under saddle. He gives his unqualified indorsement to the latest propaganda in behalf of our equine friend, which is a boost for horseback riding. Mr. Smith thinks horses are fine in this line and is glad to see a movement to retire them from drudgery. It is a recognition, he feels, that horses are no longer a factor in haulage or on the farm and that this field is being rapidly yielded to the agencies which are best fitted for the task, the truck and the tractor.

TO CUT TAX WHICH WOULD COST INDUSTRY \$100,000,000.

Following representations by C. C. Hanch, H. H. Rice, J. S. Marvin and Alfred Reeves of the National Automobile Chamber of Commerce and by delegates from the American Automobile Association, the National Automobile Dealers' association, the Motor and Accessory Manufacturers and the Rubber association, the tax committee of the National Industrial Conference agreed on Oct. 23 to eliminate from its report the proposal to place a 50 cents per horsepower annual tax on automobiles and trucks in return for Federal license and a tax of one cent per gallon on gasoline. These would have been additional to present taxes on the automobile industry and were designed to net \$100,000,000 from car and truck owners and \$45,000,000 from the gasoline tax.

115 TRUCKS IN DRIVEAWAY.

A driveway of 115 trucks and 63 passenger cars was made the other day from the plant of the Reo Motor Car Co., Lansing, Mich., to the Reo Co. of Chicago.



The Roomy Interior of the New Pierce-Arrow Motor 'Bus Provides Every Comfort, Including Electric Lights, a Heating System, Window Shades, Etc.

WOMAN WINS BIG SUCCESS MANAGING POWER HAULAGE CONCERN

ONE daughter of Eve who is helping prove that there is no man's place in the business world a woman cannot fill is Mrs. James Affleck, proprietor, manager and general director of Affleck's Express, a sizeable power truck haulage concern at 77 Fountain street, Providence, R. I.

Mrs. Affleck knows the trucking business in all its angles. She is competing with other concerns in the same line where men hold sway and more than holding her own. She is hewing to the line as far as the etiquette of the business is involved and she lets her male competitors cut prices or otherwise ignore the amenities due from those engaged in the same means of livelihood.

The Affleck family has been in highway transportation for nearly a quarter of a century. When Mr. Affleck died his wife took up the wheel and guided the business along the highway of success. She has encountered rough roads, but she has always reached the goal she was striving for. At the same time she has ever given half the road to others and has achieved her aims by up-and-up methods. Neither has she ever asked quarter on the ground of sex.

While the Affleck firm used motor power as far back as 1913, it was not until the last year and, under the guidance of the woman pilot, that the concern has gone in strong for vehicles run by gasoline. Within a year Mrs. Affleck has bought two 3½-ton and one 5½-ton Packard. She now has her order in for another 5½-ton machine of the same make. Previously two trucks, a two-ton Packard and a 1½-ton Autocar were in service. This makes six machines which now bear the Affleck tag. All of the Packards have solid tires all around and the Autocar is pneumatic equipped.

She's Always on the Job.

Mrs. Affleck does not look into her place now and then to see how things are going on. Her drivers work nine hours a day on six days a week and Mrs. Affleck does the same. She is at the office at 7 a. m. and usually finishes about 5 p. m. She handles every detail of the

business, makes every deal and contract the firm undertakes and passes on every phase of the business that enters into the daily routine.

Mrs. Affleck pays her drivers well and everyone of them has a good word to say for her. Her squareness in dealing with the men who pilot her trucks is responsible for the fact that most of the drivers have seen long service and the usual hiring and firing troubles of hauling concerns are eliminated.

Affleck's express does all manner of hauling, but specializes in piano and furniture moving. All of the trucks have platform bodies with stake sides. But the big Packard recently ordered is to come with a dump body and will be mostly used for hauling coal, which purchase gives an inkling of Mrs. Affleck's grasp of haulage possibilities, the recent rise in freight rates meaning that coal for mill use will be drawn by trucks on an extensive scale from now on.

No Exercise Gallops.

The Affleck trucks go anywhere, but go there for a price. They are not in business for the exercise. Every attempt is made to get a return load on long hauls, but when it is impossible to do so the hirer of the truck pays for the expenses of vehicle and driver both ways, including gasoline, oil and wear and tear of the truck and the feed and put-ups of the skipper, plus a profit for the owner.

One or more trucks make a daily run to Boston. A weekly trip to New York city is made and runs to points in the upper New England states, to cities of New York state and to various destinations in New Jersey and Pennsylvania are frequent. Three days is allowed for the New York run. The truck usually starts at midnight, getting into the metropolis at 8 that evening, stops being only for meals and gasoline. The return start is made the next forenoon, the truck and driver putting up at Bridgeport for the night. An early start the next day brings the machine home in the early afternoon and permits it to be gone over before being housed.

On long hauls two drivers are always

used. The firm does not employ a mechanic, each driver being supposed to care for his own truck. Sometimes a driver cannot do this and in that event his fellows always turn in and add his burden to their own.

Loads Fully Insured.

Affleck's express gives full protection to the owner of property entrusted to its care. Every article carried on one of its trucks is fully insured against fire, burglary, collision, careless handling or any possible accident. The safety of this property is further ensured against damage or loss by a corps of specialists employed by the company. There are several men who work only on piano moving jobs and they are experts in this line. They juggle these big instruments as though they were toys, at the same time giving them the care that would be exercised in handling glassware.

The concern employs one man who is a past master in the art of boxing and crating. Goods carried in the Affleck trucks really need no crating. Particular customers, however, insist on having certain household articles crated. There are many who want their property safeguarded by boxes or crates. The Affleck specialist does a job from which there are no come backs. Not long since this man was called upon to crate every article on two truck loads of furniture, which were to be hauled from Pawtucket, R. I., to New York city, and thence shipped to Greece.

Knows Inside of Business.

Most any of the Affleck drivers can tell you in a jiffy how much Mrs. Affleck knows about her business. Let one of them take extra time for a trip and he is called on the carpet to explain. If he has a straight story he gets a quick O. K.

If one of the wheel handlers has used up an unusual amount of gasoline or oil he need not think that he is going to get away with it. Mrs. Affleck knows that he has been out of bounds and she checks his work and finds out the reason why.

However, she is always just and fair



Four of the Five Heavy Duty Packard Trucks Now in Service for Affleck's Express, Providence, R. I., Where a Woman Directs All Haulage Operations.

and while she gives censure when it is deserved she is as generous with praise and financial reward to those who prove worthy. She deals with the public as she does with her drivers, in a straight forward, manly—or womanly—way, and that's why she gets plenty of good drivers to handle the business which her right methods has builded.

TO FIGHT "LUMBER" LAW.

A law preventing the hauling of logs on trucks over model roads was passed by the Louisiana Legislature this spring and is now being attacked as class legislation by the Shreveport Automobile Dealers' association, which has applied to the civil courts for an injunction restraining its enforcement. Not only are logs barred from model roads, but the hauling of hewn or sawed timbers over any road in the state is forbidden without the payment of a special fee fixed by a police jury in each county through which it passes. The jury fixes the damage that may be done and provides a fee accordingly. A truck load of 10,000 pounds of iron pipe or other material may be hauled at will, but lumber is barred.

BAN 'BUSES ON TROLLEY ROUTES.

An ordinance went into effect at Hartford, Conn., Nov. 1, regulating the routes of the increasing number of passenger 'buses and excluding them from streets where trolley cars operate.

BOOKLET ON OVERLOADING.

A booklet on the evils of overloading trucks is being sent highway engineers, commissioners, manufacturers, dealers and other interested parties by the Motor Truck Committee of the National Automobile Chamber of Commerce. The subject matter was written by Robert O. Patten, truck sales manager of the Pierce-Arrow Motor Car Co., and F. S. Horner, transportation engineer of the Packard Motor Car Co.

FARMER TRUCKS WHEAT 480 MILES TO MARKET AND PROFITS ON DEAL

The Associated Press thought well enough of the accompanying item to flash it by wire to its thousands of subscribers in the United States:

Omaha, Neb., Oct. 21.—Unable to obtain cars in which to ship his wheat and finding local elevators filled to capacity, D. C. Hibbard, a Potter, Neb., farmer, carried 110 bushels of wheat on his two-ton truck to Omaha, 480 miles.

The trip required three days. The total expense was \$22.09, or about 21 cents a bushel. The wheat sold in the Omaha market for \$2 a bushel, which Hibbard said insured him a better profit than he would have received by selling at home.

This is but one of hundreds of cases where the truck is daily enabling the farmer to extend his trading operations and thereby increase his profits.

FEDERAL BRANCH BANQUET.

William H. Bartleman, Philadelphia branch manager for the Federal Motor Truck Co., Detroit, dined his sales and service representatives from the factory sales department at the Bellevue-Stratford hotel last month, when the plans and policies of the factory for 1921 were outlined by A. W. Billingham, a traveling factory representative. Clifford K. Smith, district sales manager for the factory, also addressed the gathering.

LIMITS TRUCK LOADS.

San Bernardino county, Cal., has adopted an ordinance limiting truck loads to 10 tons and limiting the load per wheel per inch of tire as follows: Pneumatics, 750 pounds; solid rubber, 650 pounds; steel, 600 pounds.

AUTO INDUSTRY STANDBYS.

The activities of the National Automobile Chamber of Commerce have been such a factor in the forward strides of the industry that it is doubtful if there is a manufacturer, distributor, dealer, salesman or owner who is not interested in the executive personnel of an organization which never fags in its labors for the cause.

For that reason MOTOR TRUCK is herewith reproducing a picture of the officers and directors. They are: Standing, J. S. Marvin, assistant general manager; Alvan Macauley, Packard; Harry S. Jewett, Paige-Detroit; R. E. Olds, Reo; W. C. Sills, Chevrolet; J. E. Kepperly, Willys-Overland; Fred J. Haynes, Dodge Brothers; Alfred Reeves, general manager; C. W. Churchill, Winton; J. Walter Drake, Hupp; S. A. Miles, show manager; William E. Metzger, Columbia.

Seated, A. J. Broseau, Mack, secretary; Roy D. Chapin, Hudson, vice president; Charles Clifton, Pierce-Arrow, president; Windsor T. White, White, vice president; H. H. Rice, G. M. C., treasurer.

TRUCK TRANSPORTATION VITAL TO MASSACHUSETTS.

The importance of the motor truck in Massachusetts transportation was emphasized by Commissioner of Public Works John N. Cole in a recent address before the State Chamber of Commerce. He said that in Massachusetts the people were more dependent on the highways than in any other state because of the lack of coordination and cooperation of the railroads and the inadequate and unsystematic terminal facilities of Boston.

"The Boston terminal problem," he declared, "is more serious than most people realize and is intimately related to the whole question of highways as they affect the short haul for freight and motor transportation. The state must increase the field for motor transportation," he affirmed.

STARTING HIGHWAY WORK.

The New York highway department is making ready to start new construction. No new road work has been let since last May. Many contractors are finishing up their present jobs and reasonable bids are expected for work now being advertised. Some winter work will be done and construction will be in full swing by early spring. New Jersey is also preparing its programme for next year.

CONNECTICUT HEADLIGHT LAW.

The driver of any motor truck running in Connecticut after sundown without acetylene or electric headlights is operating in violation of the law and is liable to arrest and fine.

The law is being rigidly observed and owners should see that their trucks are properly equipped.



MOTOR TRUCK Readers Are Hereby Introduced to the Officers and Directors of the National Chamber of Commerce.

ARMLEDER TRUCK SPRING MOUNTING

EXTREMELY broad claims are made by the O. Armleder Co., Cincinnati, O., for a form of spring mounting that was invented by its engineers and patented by the company, so that it now has exclusive use of what is maintained to be a decided advance in truck frame suspension.

Various methods of obtaining spring resiliency have been used for years in the construction of vehicles of different types. These may be classified as pivoting, shackling and the use of guides, unless the springs are full elliptic. These are so well known that description is unnecessary.

With all of these the principle has been to straighten a curved spring, the degree of curvature depending upon the clearance desired, this being least with heavy duty truck springs and cantilever type springs. Obviously, pressure upon any form of curved spring increases its length and this necessitated shackling the rear ends of both front and rear springs unless the Hotchkiss system of drive was used, in which event the forward ends of rear springs were pivoted as the front springs, and radius rods were necessary when both ends of rear springs were shackled.

One of the results of spring action is the movement of the axles longitudinally under the frame in ratio to the degree of spring deflection or reflexion, and this increases or decreases the angularity of the radius rods, which resulted in engineers very generally adopting a long front hanger for the rear springs that the extreme angle of the radius rods might be comparatively small, this lessening the upward thrust upon the frame and minimizing the resultant stresses. Generally speaking the ideal construction has been regarded as that which will keep the driving shaft and radius rods nearest to a straight line, especially under load.

As slower spring action is obtained with long springs, this type has been favored by engineers, who have sought to absorb shocks and stresses in them so far as possible. The rear springs of Armleder design have no shackles or bolts, which is claimed to eliminate about 48 wearing parts. The springs are semi-elliptic, with the ends of the master leaves extended straight, and in the one-ton chassis these are 63½ inches long, or approximately 10 inches longer than the springs usually used with this size chassis.

On the frame side members are bolted the spring hangers, which are bell-shaped, with flanges that are slightly curved from the centers toward the ends. These hangers are sufficiently above the lower webs of the side members so that the frame is between the spring ends. The springs are secured to the rear axle by heavy clips and yokes. The relation of the rear axle is maintained by I section radius rods that are pivoted to long hangers so that under load they are practically parallel with the frame side

members. The radius rod hangers and the rear spring hangers are tied by cross rods.

As the load is placed on the chassis the deflection of the springs brings a greater length at each end in contact with the hangers until they contact the full length of the hanger flanges, thus shortening and stiffening the springs and lessening their action. This automatic action shortens the springs 18 inches. This construction is claimed to afford touring car spring resiliency when the chassis is unloaded and the strength of truck springs when loaded, with ratio of action corresponding to the load, and it affords practically extremes of flexibility and strength when these qualities are required with no change whatever.

The springs absorb the road shocks and vibratory stresses, while without the conventional means of mounting there can be no destructive wear and there is no need of frequent oiling, as is necessary with other constructions. All the wear is upon the spring ends and the wide flanges of the hangers, and no matter what the operating condition there is remote probability of spring breakage.

N. A. C. C. SERVICE COMMITTEE.

President Clifton recently made a number of changes in the personnel of the Service Committee of the National Automobile Chamber of Commerce, due to shifts in the industry. This committee as now constituted follows: A. B. Cumner, chairman (Autocar); L. C. Voyles (Marmon), F. A. Bonham (Chevrolet), F. Van Z. Lane (Locomobile), J. B. Bray (Grant), C. R. Lester (Packard), F. J. Wells (Pierce-Arrow).

TRUCKS BEAT RAILROADS.

Motor truck lines operating between Dallas and Fort Worth, Tex., are able to compete with railroad freight rates and because of the more efficient and dependable service are doing a tremendous business. This rate is about 20 cents a hundred. Truck lines are also operating on a large scale in other sections of the state and Texas no longer worries about railroad tieups.

FEDERAL RESERVE BOARD SEES READJUSTMENT OF TRADE CONDITIONS

The Federal Reserve Board breathes optimism in its monthly review of business condition on Oct. 31.

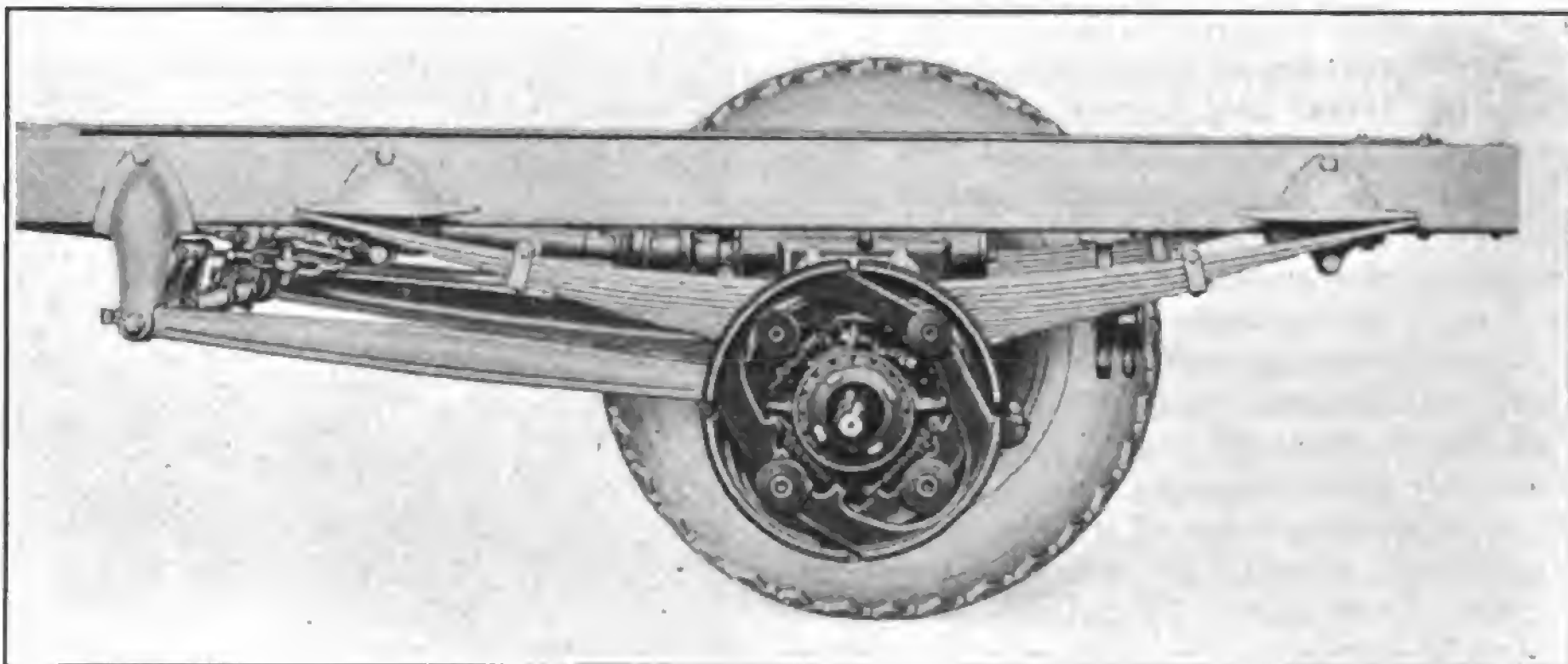
Although the readjustment process has been marked by uncertainty and some suspension of activity, the board described the economic and business situation as a whole as one showing "much inherent strength and an ability to attain a position of relative stability through an orderly transition."

It argued that the necessary changes in the direction of normal conditions would be accomplished without great disturbance unless unforeseen factors entered into the process.

SAYS 'BUSES TO REPLACE TROLLEYS IN NEW YORK CITY.

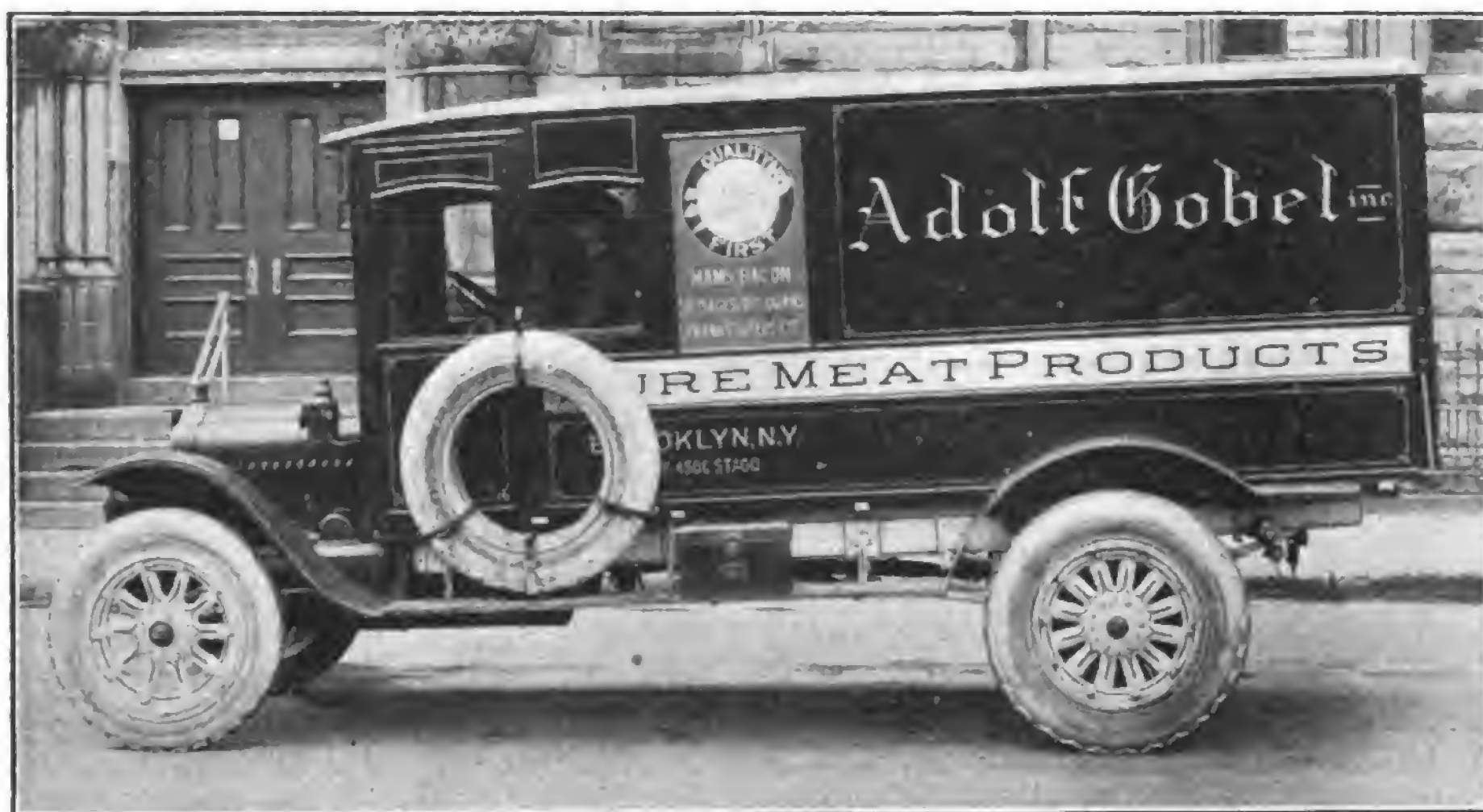
C. D. Peet, sales manager of the Napoleon Motors Corporation, gives considerable weight to the predictions that within five years street car lines will be eliminated in New York city. He looks for an era of trackless transportation in all large cities. He feels that this movement would make greater strides but for the fact that city 'bus work is disorganized and that all 'buses want to run only on congested lines. Franchises and organization will ensure reliable service and bring the 'buses into their own. Mr. Peet is confident that the day is coming when the demand for this sort of business will swamp the present truck building possibilities of the country.

Trackless transportation will remove from the city the unsightly electric poles, will clear the streets of the electric lines and the rails, and passengers will have the convenience and safety of embarking at the curb instead of taking a dangerous walk to the center of the street and the all too dangerous so-called safety zones.



Spring Mounting Invented by Engineers of Armleder Co., Cincinnati, O., for Which Broad Claims Are Made.

MEAT PACKERS DEPEND ON TRUCKS



White 1½-Ton Truck Used for Delivering Meat Products by Adolph Gobel, Inc., Brooklyn, N. Y. There Are 39 Other Whites in This Fleet.

IT IS doubtful if there is any industry which needs the backing of a dependable distribution service more than meat packing. When the delivery system falls down customers go hungry, retailers wax wrothy, goods decay and profits are wiped out. Meat packers everywhere are learning that motor trucks are the most dependable equipment for this service.

The packer must get his freshly killed meats on their way to the consumer as speedily as possible. Retailers are often 50 miles or more away. The experience of most packers is that two-ton trucks provide the speed and dependability for these runs.

The results achieved by the Cleveland Provision Co., Cleveland, O., through the acquisition of a fleet of motor trucks is typical of what has been gained by other packers. J. Bersch, the company's transportation superintendent, reports that the motorizing of the concern's delivery equipment:

Increased sales 100 per cent. through more prompt service.

Decreased by over 25 per cent. the deterioration of meats by direct delivery.

Saved thousands of dollars by cutting off overhead of branches.

Enabled one-day deliveries to all cities within 50 miles.

Branch House Eliminated.

This company formerly operated a branch house at Lorain, O., about 30 miles to the west. The meat was sent by railroad freight and was delivered on the fourth day after leaving Cleveland. Trucks now make this run daily, the branch house and its attendant costs having been eliminated, the meat is naturally delivered in much better condition and delivery costs have been reduced. This company has a fleet of 32 White trucks, some of which make daily trips to Akron, 30 miles; Canton, 60 miles; Ashtabula, 54 miles, and other distant points.

The White truck has found a rich field for its services in this industry. The

annual White Roll Call shows a list of packers, with the number of trucks first purchased and the number now contained in the various fleets. This list follows in part:

Adolph Gobel, Brooklyn, N. Y....	10	40
Otto Stahl, Inc., New York city..	5	13
F. G. Vogt & Sons, Inc., Philadelphia	1	14
Cleveland Provision Co., Cleveland, O.....	1	32
Kingan & Co., Indianapolis, Ind.	4	13
Armour & Co., Chicago.....	4	309
Cudahy & Co., Chicago.....	2	42
Swift & Co., Chicago.....	2	164
Skinner Packing Co., Omaha Neb.	11	11
Western Meat Co., San Francisco	2	27

Many Uses for Trucks.

Packers have also found other uses for trucks in addition to the delivery of their products to retailers.

Armour & Co. in Chicago uses heavy duty trucks to haul butter, eggs, etc., from markets to their plant.

The North Packing & Provision Co. of Boston use two five ton dump trucks to haul ashes from the boiler room of their plant to various places about the city. A

contractor formerly was paid to haul away these ashes. Today the trucks are netting the company \$200 a month for ashes sold.

The Nagle Printing Co. of Jersey City, N. J., with three five-ton and three 3½-ton trucks, sent the fleet to New Brunswick last year when rail transportation was crippled, to haul live stock from New Brunswick into the slaughter house.

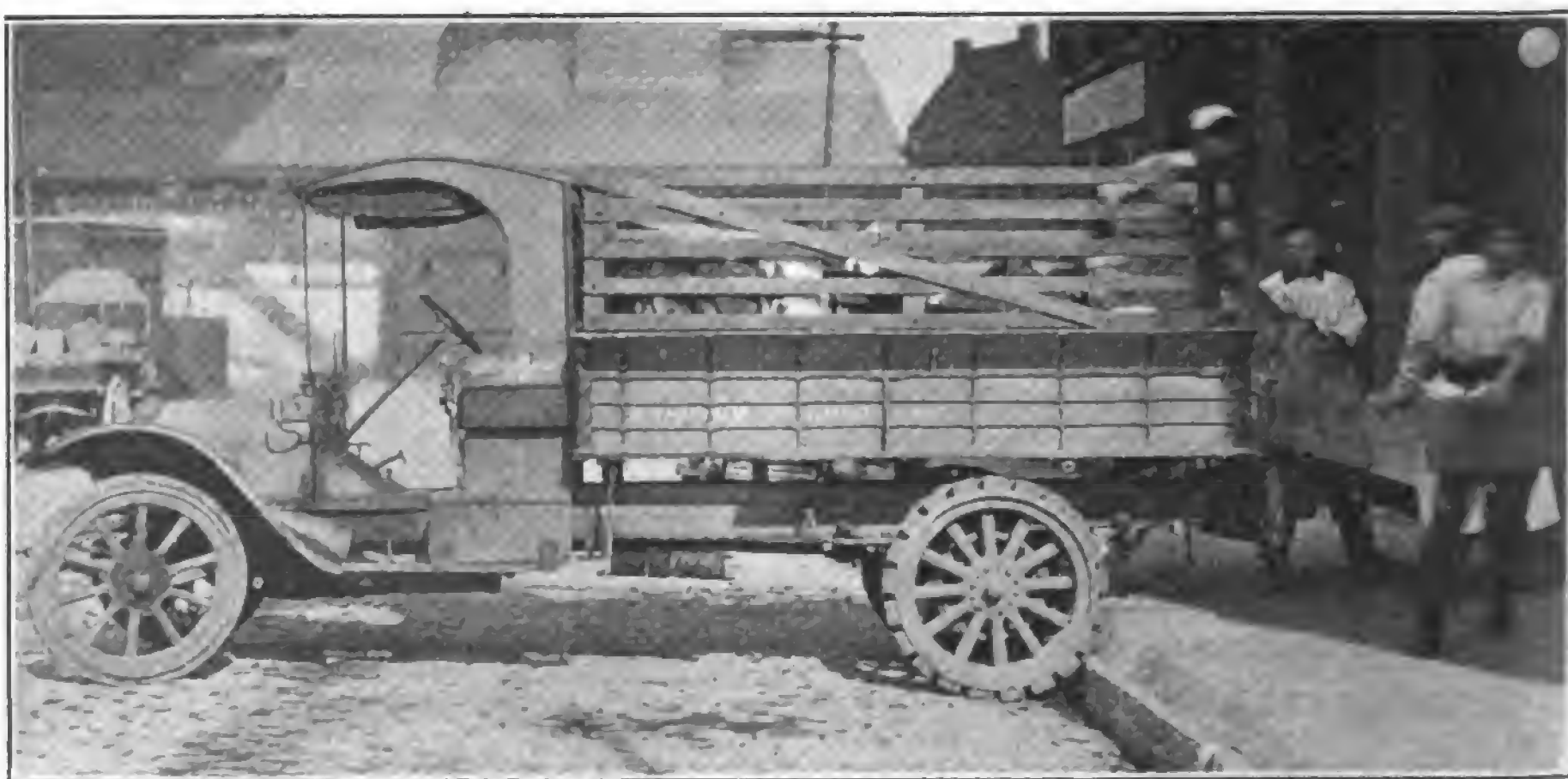
Many trucks that went into the meat packing delivery service nearly a decade ago are still in daily service. Armour & Co. reports two of its Whites at East Spokane, Wash., as having covered 200,000 miles each. The United Home Dressed Meat Co. of Altoona, Pa., has one White that has run 150,000 miles, the Boston Fresh Tripe Co. one that went into service in 1911 and is still going, the Harris Abatoir Co. of Toronto, Canada, one that has been running since 1913, and the Indianapolis Abatoir Co. of Indianapolis, Ind., a two-ton White that has run 160,000 miles in nine years.

NEW ENGINE INVENTED.

Consul General Wilbur has reported from Genoa, Italy, to the United States Department of Commerce the invention of a new engine, patented in England and America, and for which patent rights are sought in all countries by British engineers. The engine was designed by Severe Campofregoso, an Italian engineer, and among its reported advantages are complete absence of valves and cam axis; four times the power of engines now in use; absence of vibration; no internal strains; reduction of attrition; economy in fuel; simplicity and rapid, low cost of operation.

GOODYEAR ON FOUR-DAY WEEK.

Rather than lay off several thousand men the Goodyear Tire & Rubber Co., Akron, O., forced to reduce its daily output from 16,000 to 12,000 tires, went on a four-day-a-week basis, beginning Oct. 15.



Loading Live Cattle Down Runway of White 1½-Ton Truck of the Fleet of 300 in the Service of Armour & Co., Chicago.

No Limit Trucking Bureau Ready to Live Up to Its Name

"Door to Door" and "Coast to Coast" Its Slogan—Gets Hearty Welcome From New England Haulers and Shippers—Offices and Receiving Stations in Boston and New York.

BORN in Boston on July 1, the No Limit Trucking Bureau, with headquarters at 14 Beacon street, is reaching out in every direction and appears destined to ultimately solve the return load problem and clear other hurdles which now confront the commercial haulers of New England and the East. It aims to bridge No-Man's land between the hauler and the shipper and bring these two, which need each other, in direct touch.

"Door to Door" and "Coast to Coast" is the slogan of the bureau.

This goes, too, for the bureau is now negotiating for a haul from Boston to California.

The bureau will branch out this month with the necessary complement to its Boston headquarters, an office in New York city. A representative is now in the metropolis looking up contracts and hunting for a home for the organization.

Members of the bureau are not confined to Boston, but are being gradually acquired in all parts of New England. Among those registered are power haulers from Bath, Me., Portsmouth, N. H., and points in Vermont, Rhode Island and Connecticut, including many in Massachusetts outside of Boston.

What this institution can do for the shipper may be gleaned from the fact that two Boston members have 100 trucks between them, most of them of the heavy duty type.

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The bureau is equipped to do a haulage job aggregating thousands of tons on a few hours notice. This signifies that a tie-up of railroad transportation need cause little concern in New England. The No Limit Trucking Bureau is ready to stand back of its name.

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Meanwhile it is growing stronger and more powerful every day. The starting of a New York office means, among other things, that the member truck man who leaves Boston for New York and the hauler who sets out from New York to Boston will be pretty nearly guaranteed a return load.

Member trucks are going daily to New York state, New Hampshire and Vermont, and, of course to Rhode Island and Connecticut. Frequently they hit Maine. The shipper can get instantaneous service to most any point. If he has but a

few hundred pounds he may be almost certain that it can be taken on to fill out a load and with a resultant cut in the rate. In this way the shipper gets quick and sure transportation and often for less than railroad or express rates. In addition he saves crating and packing costs, as well as the trucking to and from terminals.

Manager E. P. Lavelle oozes optimism. There is no phasing him. If Vermont should suddenly take a dislike to the color scheme of its mountains and decide to exchange its Green elevations for New Hampshire's White mountains, Manager Lavelle would have a mammoth fleet of trucks on the job "first thing in the morning."

If the potato growers of Aroostook county, Maine, wanted their tens of millions of bushels shipped to Boston over night Manager Lavelle wouldn't miss a single cylinder, but would have a train of trucks on its way to Maine within the hour.

With a capacity of thousands of tons of trucking equipment at his beck and call there is no reason why Manager Lavelle and his bureau cannot cope with most any transportation aspect which may crop up in the New England territory at any time.

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Should the storm king get in the same kind of sturdy strokes this winter that he did last and clog the highways between New York and Portland, the textile plants of the East need not again face shut downs through lack of supplies as they did a trifle over six months ago. All they have to do is to call "Haymarket 1725" and Manager Lavelle will do the rest.

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The bureau membership fee is \$12 per year, for which one return load and most any one job gives a full return. The firm further announces that at the end of the year the fee will be returned to any person who feels that he has not got his money's worth. Telephoning for jobs and small expense included in this department are put down as office expenses and are not chargeable to members. That office overhead is some item may be gleaned from the fact that on a recent day there were three phone calls to New York in connection with one haul.

The bureau's commission on each job is 10 per cent., which is nominal, many organizations in this line charging double that figure. This commission is not asked until after the trucker is paid for the job. In other words, the bureau accepts partnership in the job and should a case arise where the hauler is not paid for his work the bureau gets nothing and asks nothing. Moreover, the bureau acts as a collection agency in rounding up bad bills.

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A special feature which the concern is now preparing to supply its members is handy service at all points between Boston and New York. Arrangements are being made with a service station or garage in every city and town between the two big centers whereby the driver whose truck breaks down can get help almost immediately.

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This prevents delays, the avoidance of which means money to the haulage house which has contracted to make deliveries on time and means a lot to every owner, as the time of two drivers and a big truck are worth something.

The bureau is to make a directory of these service stations and garages, with the address and telephone number of each. The minute a driver is stalled he can take out his list, get the phone number of the handiest station or garage and have a wrecking crew on the job in jlg time. If his machine is falling, but still able to run he can quickly decide upon an objective and hump along to the next service point, without complicating matters by putting in useless hours on a tough repair job.

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The bureau confidently anticipated that the service station and garages who are to be negotiated with for this service will readily agree to give a discount to members, the added transient business being more or less "velvet."

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For this special feature members will be charged \$3 a year. This sum will barely cover the cost of lining up these garages and getting out the printed matter in connection with this plan. No part of it will be profit for the bureau, this helpful innovation being thrown in as part of the bureau service.

There is an angle to this situation

which is yet in an embryo state. That is the question of what will happen should a member's truck be stranded at some isolated point along the route and the driver not be well enough "heeled" to cover the cost of a repair job of magnitude.

Should the bureau guarantee payment?

There is no reason why it should under present conditions. At the same time the firm is maintaining a rigid censorship over its membership list and wields the blue pencil in the case of fly-by-night trucks who are not deemed fully dependable and responsible.

This censorship will be more rigid after the first of the year, at which time it seems certain that the membership fee must be increased, possibly going up to \$25. The overhead entailed in chasing up shipments either by personal representative or telephone and the thousand and one ramifications and side issues involved in getting business on a large scale suggests that a charge of \$2 a month or thereabouts is anything but excessive for the service rendered.

It is possible that at that time, with a substantial membership of substantial members, and a living fee, the bureau may feel able to guarantee the service station or garage which looks after a disabled member truck against loss. This would be a good thing for the garage man, of course, but it would be a God-send to the truck owner who, in fear of holdups and the natural desire not to load an employee down with a surplus of coin and chance its being lost, would be able to find a place in any town or city along the line which would speedily put his truck back in running shape without demanding a cash settlement.

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Possibly the greatest good which is to come out of this trucking bureau may be a standardization of rates. This is something which will not come in a day. Manager Lavelle is for it and he is getting nearer and nearer to the goal with every deal he consummates. Standardization of rates always means higher rates as far as the hauling industry is concerned.

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The trouble now is that irresponsible owners of trucks do not get a return commensurate with the service given. Most of them figure the wages of the driver, the cost of gasoline and oil, add on a fair profit, and let it go at that. Depreciation, interest on investment, overhead and the like are Chinese characters to them and mean absolutely nothing in their young lives. A typical case of this kind was an offer to Manager Lavelle a few days ago by an owner to send his five-ton truck to New York for \$100, with no surety of a return load.

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The No Limit Trucking Bureau is shouting for a straight rate of \$1 a mile for all distances over 25 miles. For shorter hauls a charge by the hour or job is advocated, the former preferred.

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Why the hourly charge is the proper caper is shown in the experience of a Boston hauling concern this month. An

exactly similar job was done twice. In the first case the operation required three hours. In the second instance there were delays and unexpected obstacles and the truck and its attendants were out six hours. The charge was made by the job and on the theory that it was a three-hour job. It is easy to see that the trucker lost money on the second haul.

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The bureau is clamoring for a minimum charge for short pulls of \$2 an hour and a maximum of \$5 an hour. The latter charge is for a big truck with several men and the former for a small truck, with driver only. The number of men and the size of the truck is always the determining factor in this rate plan.

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The bureau does not demand that its members shall charge or maintain these rates, but is urging them to do so and one by one they are falling into line.

Standardization of rates puts the haulage business on a more substantial basis. It means that the commercial hauler will be able to get a return on his investment and a living price for his labor and skill. It means that he will be able to buy a new truck when his old one has run its course. It means that more trucks will be used and that the dealer will not only sell more, but will get paid for those he does sell.

The shipper will know what to expect and will not be forced to spend valuable time getting bids for work. The trucker will have a greater measure of self respect when cut-throat methods are thrown into the discard for all time.

It is hoped that the day will come when the No Limit Trucking Bureau will be able to supply its members with all the work they can do. At present members are allowed to get whatever outside work they can. While they depend on the bureau for general hauling, many of them get their greatest benefit through picking up return loads as a result of membership and also filling out part loads.

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Another striking advantage to the member is that there is no limit to the number of trucks he can control. If he meets a proposition for which he has not the equipment or facilities he is assured that he can go ahead and make his bid, depending on the bureau to supply the extra equipment. This goes no matter how big an undertaking it may be. Members are advised not to be frightened by the volume of any hauling problem. The bureau will back them up.

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The hauler can take a contract beyond his capacity and get trucks through the bureau from day to day until he is in a position to buy the additional equipment of his own necessary for the work. In this way a truck man is often saved the necessity of buying trucks for which he may have only temporary use, while at the same time he can enlarge his business at the expense of the bureau without making the necessary investment until he is ready. All the experimenting

can be done without the outlay of a dollar.

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The bureau has met with such hearty cooperation on the part of hauler and shipper and with such glowing indorsement from officials of the Boston Chamber of Commerce and other civic organizations, that it is encouraged to look forward to such a healthy growth that a receiving station as early as next spring is its natural goal.

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Plans are already in the making for this structure. It is the third and, perhaps, the most vital link in the chain of service, which includes the Boston and New York bureau headquarters and the service station and garage arrangements. A receiving station in New York later is bound to come.

The receiving station will be a decided boon to both the transportation company and the shipper. The latter may send his goods there, even in small quantities, which will make up full or part loads, the price for the latter being rendered unusually reasonable in the process. The trucker, who is a member of the bureau, can also fill up his partly loaded truck or can go to the station at any time and be certain to find something to do when his trucks are idle.

Speed will be another benefit to the shipper. It will be the aim of the management to empty the station by night-fall each day. Enough trucks will be available to achieve this happy result. There will be no delays. The shipper may be always assured of dependable and reliable service and the receiving station will offer the same conveniences as do the railroads, express companies or any common carriers. A phone call will close a deal for haulage in any volume on the instant. And it will be high speed haulage, too.

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The merchant who has three or four small packages going out of town need not wait three or four days until enough accumulate to make a load. If he wants the quick and certain delivery which only the motor truck can give, he can get his few packages to the receiving station, where they will be used to make up a full load. These small shipments will just about fill the bill for truckmen who have part loads and need a little more to make their trip a paying one.

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The receiving station should do more than any other agency to standardize rates. It will be an easy matter to establish rates for all haulers doing business at this terminal and once the station is established there is little doubt that every reliable trucker in Boston and vicinity will be included in this category.

An incident which shows one of the many thousand ways in which such a station will help the commercial hauler took place within a few weeks. A haulage contractor made a deal to bring a load of furniture to New York city from just outside of Boston. Through a misunderstanding a truck was sent for the

load in anticipation that six rooms were to be moved. The driver found eight crowded rooms awaiting him.

The contents of two of these rooms could not be taken, even with an overload. In his quandry the driver turned to the bureau for advice. He was told that his only recourse was to take the articles in two of the rooms and put them in storage and carry the balance of the furniture to its destination. The two remaining rooms full were taken the next time the concern had a truck going to New York without a full load.

A receiving station would have saved the cost of storage and would also have avoided the waste of time involved by the driver in getting in touch with the bureau and also locating a storage place.

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The No Limit Trucking Bureau hopes at an early day to show the possibilities of the motor truck by sending a shipment overland from Boston to California. Within a week a man who desires to get 400 pounds of goods to the coast in a hurry and has been expertly advised that it will take five months or more by railroad has negotiated with the bureau for its transfer by truck.

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The goods comprise two trunks and a bag containing valuable papers. The contents of the trunks are also highly regarded, the 400 pounds being considered by the owner as about worth their weight in gold.

The distance to the coast is in the neighborhood of 3000 miles and in the hope of getting a chance to demonstrate the efficiency of the truck for a haul of this magnitude Manager Lavelle departed from his standard figure of \$1 a mile and agreed to see that the shipment reached the coast for \$2250, which is at the rate of 75 cents a mile.

The figure naturally staggered the would-be-shipper. He liked the cut in time, it being figured that the truck, avoiding mishap, would get to the coast in three weeks, which is at the rate of a trifle less than 150 miles a day. But the price made him hem and haw.

Here Manager Lavelle interposed with the information that if the man could get enough goods from other shippers to make up a five-ton load he would save a lot of money for himself, his charge being proportionally reduced. This struck home. The man has an idea where he can get in touch with some shippers who would like to save four months in getting their stuff from the Atlantic to the Pacific and left in the belief that he could round up enough to make up a big load and thus put the cost within reach of all. Manager Lavelle is waiting hopefully for word that the deal is closed and he can father the first coast-to-coast shipment by motor truck.

The bureau also has under way the closing of a contract for a haul of furniture from Boston to Hampden, Fla., the charge for which will be \$1300. Another long trip in prospect is a run to Detroit with a load of furniture. On all these hauls the shipper will pay more than he

would for other transportation service, but he will have his property at its destination in good shape long before he could get it there by any other transportation medium and he will avoid many inconveniences, including crating, the hauling to and from terminals, etc.

For the California trip Manager Lavelle has the proper truck and drivers in mind. On the membership list are many owners of tested trucks and employers of tried drivers. The bureau chieftain has talked with some of these operators and has also checked their performances.

Some of these are of the brand which drove motor trucks up to the lines in France. They are men with whom duty comes first. Yet they are careful, not reckless. They also have judgment and initiative. For them handicaps do not exist. They are ready for any emergency and face all obstacles smilingly. They are the kind of men who know when and how to act. They know how to take a hill under all circumstances and would not hesitate to turn and back their trucks up an elevation when conditions called for such action. A truck and its load is safe with such men no matter what hazard may be encountered. A run to California would be all in the day's work for those intrepid drivers.

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Manager Lavelle of the No Limit Trucking Bureau has been connected with railroad and trolley freight and passenger service for 17 years, giving up the post of division superintendent on an electric railway to enter his new field. He knows transportation thoroughly. He saw the limitations of steam and electric transportation, however, and decided to cast his lot with the kind of transportation which has horizon. The welcome accorded his project by the commercial haulers of Boston and New England tells him he's on the right road.

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The shippers are harder to line up. Two representatives of the bureau are out now interviewing every shipper of size in the territory. Contracts are sought, but where they cannot be secured the manufacturer or merchant is asked to give a trial order at an early date and is promised the kind of service that accomplishes things.

The No Limit Trucking Bureau is getting somewhere and getting there fast. It is being well handled, squarely conducted and aims high. Watch it score a bull's-eye.

PHILLY TO ISOLATE TRUCKS.

Philadelphia plans to divert motor trucks from Chestnut, Market and Broad streets and to that end is devising a one-way street plan, north, south, east and west, for their use.

FORD BUYS COAL HOLDINGS.

The Ford Motor Co., Detroit, has bought the holdings and leasehold of the Nuttall Smokeless Coal Co. in the new river district of West Virginia. The tract comprises 4000 acres.

MOTOR TRUCK REVOLUTIONIZES EDUCATIONAL SYSTEMS IN SOUTHWESTERN STATES

According to M. B. Hoagland, vice president of the Signal Motor Truck Co., Detroit, the motor truck is revolutionizing the educational systems in Kansas and neighboring states of the southwestern farming sections. Six or eight of the small and poorly equipped schools are being consolidated into one large building where all the modern facilities and teaching advantages of the big city schools are enjoyed. The pupils are brought to these central schools and returned to their homes each day by motor truck.

DAN GILKEY VICE PRESIDENT OF ACASON CO.



Dan Gilkey, Vice President of Acason Co.

President H. W. Acason of the Acason Motor Truck Co. has rewarded the exceptional work of Dan Gilkey in building a reputation for himself and the Acason product in the far western country by promoting the Pacific coast representative to the post of vice president in charge of sales and advertising. Mr. Gilkey will make his headquarters and home in Detroit.

With the new vice president and the motor truck it was a case of love at first sight. He was the first to introduce the truck for farm transportation in his section of Oregon. Later he did commercial hauling. After learning all about the truck as an owner and operator he graduated to the selling field. He was the first man to campaign among wheat growers to move their crops by motor trucks. His best record was 117 trucks in seven months time on individual efforts to the northwestern farmers.

A Service Managers' association was definitely formed in Baltimore, Md., Oct. 18, following a number of preliminary meetings. The motto of the organization is: "Service with a Smile."

SIDELIGHTS ON TRUCK INDUSTRY

SPECIAL VAN BODY CARRIES

ALL FURNISHINGS FOR SIX-ROOM HOUSE

What is believed to be one of the best designed bodies ever developed for the long distance transportation of furniture has been built for Warner & Co., Boston, a concern that specializes this work, which is installed on a 3½-ton White truck chassis. The company desired a machine for making hauls between Boston and New York, Philadelphia, Baltimore, Washington and other cities even further distant that would have sufficient capacity to carry the furnishings of an average home at a single load.

The chassis has long wheelbase and it is mounted on pneumatic tires and the body is a van type, the cab being unusually large and completely enclosed so that the crew will be protected in inclement weather. The cab is fitted with berths so that two of the three men of the crew can sleep while one drives, and usually the drives are made without stops save for meals and replenishments of fuel and lubricant.

The body is constructed without the interior padding common to furniture trucks and the storage compartment can be divided by removable partitions, and provision is made for lashing the contents of each division to the bottom of the body so that no damage can result from movement that might otherwise result from road shocks and spring action. The van body has 1000 cubic feet capacity and into it the complete furnishings of a six-room house may be loaded.

The truck has electric head, dash, tail and interior lamps, so that it may be loaded or unloaded at night should occasion arise, and with pneumatic tires drives may be made in fast time, the speed insuring maximum service utility and the greatest productiveness.

Eisemann Magneto Corporation paid a regularly quarterly dividend of \$1.75 a share on the preferred stock on Nov. 1.

NEW ADVANCE-RUMELY TRUCKS ON DEMONSTRATION RUN.

Four of the models of the new 1½-ton truck now being produced by the Advance-Rumely Thresher Co., at its Chicago factory recently made a highly successful demonstration run, each carrying 3500 pounds of repair parts. The tour was from the company headquarters at La Porte, Ind., to Indianapolis, Peoria, Des Moines, Kansas City, Wichita, Dallas, Aberdeen, Fargo and return to La Porte. All of the trucks were driven to destinations and finished in excellent condition.

G. M. ACCEPTANCE CORP. CHANGES.

The General Motors Acceptance Corp. has made a number of changes in its personnel, including the transfer of R. S. Hudson, assistant credit manager at the New York branch to the Atlanta branch as credit manager. Manager G. H. Zimmerman of the Atlanta branch comes to the executive offices in New York city and is succeeded by Harry R. Brown, formerly assistant at the Chicago office. B. E. Hildebrandt, formerly assistant at Chicago, is made credit manager at Dallas, Tex. M. H. Beckett has been named credit manager at the London, England, branch.

FULL SPEED AT JACKSON PLANT.

The plant of the Jackson Motors, Inc., Jackson, Mich., will soon be operating at full capacity with an augmented force, according to announcement at a dinner of officers and department heads held recently. New expansion plans were announced and General Sales Manager Patrick Emerson sketched the new series of cars for 1921.

FARM POWER CAMPAIGN.

The National Carbon Co., Cleveland, O., is this month conducting its second farm power campaign for Columbia Hot Shot batteries.

WAUKESHA CO. IS AWARDED

CONTRACT FOR \$5,000,000 OF TRUCK ENGINES

The Waukesha Motor Co., Waukesha, Wis., has closed a contract with one of the country's leading truck manufacturers to furnish engines valued at \$5,000,000, with contingent orders amounting to \$10,000,000 additional. The first part of the order calls for 10,000 engines and will require two years to fill.

Although the Waukesha Motor Co. was founded only in 1910, which year it did a \$20,000 business, it is now one of the largest manufacturers of truck and tractor motors exclusively, and is well qualified to handle such a large contract. Its contract from the government more than two years ago was but half the size of this job.

The company did a business of \$5,000,000 this year and will double that figure in 1921. Its floor space has increased in 10 years from 3000 square feet to over 210,000, and greater expansion is to follow this order. An issue of eight per cent. preferred stock has been made, all of which is being absorbed in Waukesha, continuing home ownership and control.

President S. A. Perkins and Vice President and Chief Engineer Harry L. Horning are now engaged in laying out an enlarged programme of activities for 1921.

MELHADO NAMED BETHLEHEM SALES MANAGER.

Effective Oct. 15, Charles Melhado, became general sales manager of the Bethlehem Motors Corporation, Allentown, Pa., the appointment having been made by Receiver Clinton E. Woods. Mr. Melhado, who has been in charge of export sales for the corporation, succeeds Roy Davey, who recently returned to the post he formerly held at the request of Receiver Woods. Mr. Davey is said to have withdrawn in order to accept a most important post in the industry.

HURLBURT IN NEW HANDS.

The Harrisburg Manufacturing & Boiler Co., headed by S. F. Dunkle, has purchased all interests held by the Hurlburt Motor Truck Co., New York city, in the Hurlburt truck. This concern has been making the truck for some time under an agreement with the Hurlburt Co. An expanded manufacturing programme is planned. Foreign business will be pushed and, in this connection, contracts have already been received from England, Spain, Brazil and India.

The Stromberg Motor Devices Co., New York city, which is operating only about 20 per cent. of normal, is to reduce prices when production gets back near capacity again.



White 3½-Ton Truck Chassis with Furniture Moving Van Body, Built Specially for Warner & Co., Boston, Mass., for Long Distance Hauls.

TRUCK PILES UP RECORD MILEAGE IN CROSS-COUNTRY CATTLE HAULAGE

GEORGE H. DUMAS, Elm street, Shrewsbury, Mass., has a 1½-ton Republic truck which he prays by and swears by, but never at. A record of his daily work shows that he eats his meals with the truck and that if he gets the required hours of sleep some must be stolen naps at the wheel of his faithful Republic.

Mr. Dumas has been driving a Republic truck for several years, but his latest model, which he has had but three months, is the one that he raves loudest about. Mr. Dumas is a Republic man, through and through. He admits that there may be other good trucks, but he wants nothing in his but a Republic. In this connection he states that during the time he has been driving motor vehicles he has seen scores of trucks stalled by the roadside, but only one Republic has been in the number.

Mr. Dumas can hardly be blamed when the results achieved with his machine are known. He often gets as much out of his truck in a day as the ordinary owner gets in a week. He specializes in hauling cattle, doing no work outside of this line except at the call of a friend. Most of his driving is over country roads where the hand of the modern highway builder has never penetrated. Few trucks encounter the rough going this Republic meets.

The owner wore out a set of solid tires in less than 10 weeks on this latest machine and felt that this equipment had more than given him his money's worth. He now has pneumatics in front and has increased the width of the rear solids from four to six inches.

309 Miles in 24 Hours.

Perhaps the haulage stunt of Mr. Dumas which must be paraded in front among his many unusual feats was the driving of his Republic 309 miles in a day. The owner drove the machine from his garage at 3 a. m. and drove it in again at 10 minutes to 3 the following morning. This mileage included a number of stops for loading and unloading.

In this day's work were two round trips to Brighton, Mass., from Worcester, a total of 168 miles; one from Worcester to Waltham, 63 miles, and another from Worcester to Athol, 78 miles. During the 24 hours Mr. Dumas used up \$16 worth of gasoline and oil. In spite of the country roads he states that his truck gives him between 10 and 11 miles to the gallon of gasoline.

Mr. Dumas has done considerable hauling this fall to and from the Massachusetts fairs. Because he operates his own truck and is known to be an unusually careful driver owners of blooded stock have sought his services. He recently hauled King Pontiac, a noted bull, and also a champion cow, which has a record of 48 quarts a day. The owners of these valuable animals know that they are as safe in the Dumas truck as in their own well furnished stalls.

The Shrewsbury man knows cattle and how to handle them. This is a feature which appeals to people who have a lot of money invested in blooded stock, which must be moved. A bull with the temper of an operatic star is but a toy in the hands of Mr. Dumas, who has never yet met one of these monsters which he could not handle. A few days ago he hauled a bull valued at \$3500 to a slaughter yard, the animal being endowed with such an unruly disposition that the owner handed out a death verdict as the proper caper in his case.

Hauls Racing Horses.

The Republic has also housed a number of racing horses. One of the regular hauls for Mr. Dumas is to take a fast stepper owned by Frank M. Knowles of Worcester to a training track at Hatfield, Mass., where the equine is rounded into shape. The truck comes back empty and later goes light and brings the animal home. The distance each way is 108 miles, the day's trip therefore being 216 miles.

When a MOTOR TRUCK representative dropped in to see Mr. Dumas the latter reviewed his work for the previous nine days.

Saturday, Sept. 18, he brought four cows to the Eastern States Exposition at Springfield, Mass., a run of 50 miles each way.

Sunday, Sept. 19, he made a trip to Rutland, Mass., and another to Concord, Mass.

Monday, Sept. 20, he made two trips to New Britain, Mass., hauling seven cows in one load. This mileage was about 232.

Tuesday, Sept. 21, he made two trips to Brighton, Mass., 168 miles.

Wednesday, Sept. 22, he repeated Tuesday's performance, 168 miles.

Thursday and Friday, Sept. 23 and 24, he made four round trips from Worcester to New Braintree, two each

day, a total of 460 miles for the two days.

Saturday and Sunday, Sept. 25 and 26, he hauled cattle from the fair at Springfield to the farms of their owners in Worcester, going over 200 miles in the two days.

On several of these days he also did local hauling.

1426 Miles in Nine Days.

For these nine days, Sundays included, his mileage was 1426, an average of 158½ miles a day.

Mr. Dumas recently took three cows for Leander Merrick from Worcester to the Brandon farms at Groton, Conn., owned by the estate of Merton F. Plant. He hauled a couple of cows from Worcester to a point on Cape Cod, near Hyannis, returning by way of Brockton, where he got a return load. On the latter trip of over 200 miles he left at 6 a. m. and got home at 7 p. m., and on the former journey of 158 miles he started from Worcester at 7 a. m., arriving back at 6 p. m. A trip to Brattleboro, Vt., and return was negotiated between 6 a. m. and 8 p. m. The distance both ways is 226 miles.

Overloads on Rough Roads.

This Republic truck not only rides over the roughest kind of roads and for great distances, but it is constantly overloaded. Mr. Dumas carried nine cows in one haul for the Bridgewater Reformatory officials from the Worcester fair grounds to the steamboat wharf, Atlantic avenue, Boston. On this same day he took six head from the fair grounds to the woman's prison at Sherburn. He quite often takes as many as seven head of cattle in one cross-country haul.

As previously stated he hauls only cattle unless a friend seeks his services. One of his recent loads consisted of a ton of sugar, five barrels of flour and a great quantity of canned goods. Another included 40 bags of cement, weigh-



Republic 1½-Ton Truck Which Sometimes Works 24 Hours a Day for George H. Dumas, Shrewsbury, Mass.

ing 4000 pounds, many sashes and blinds and three men.

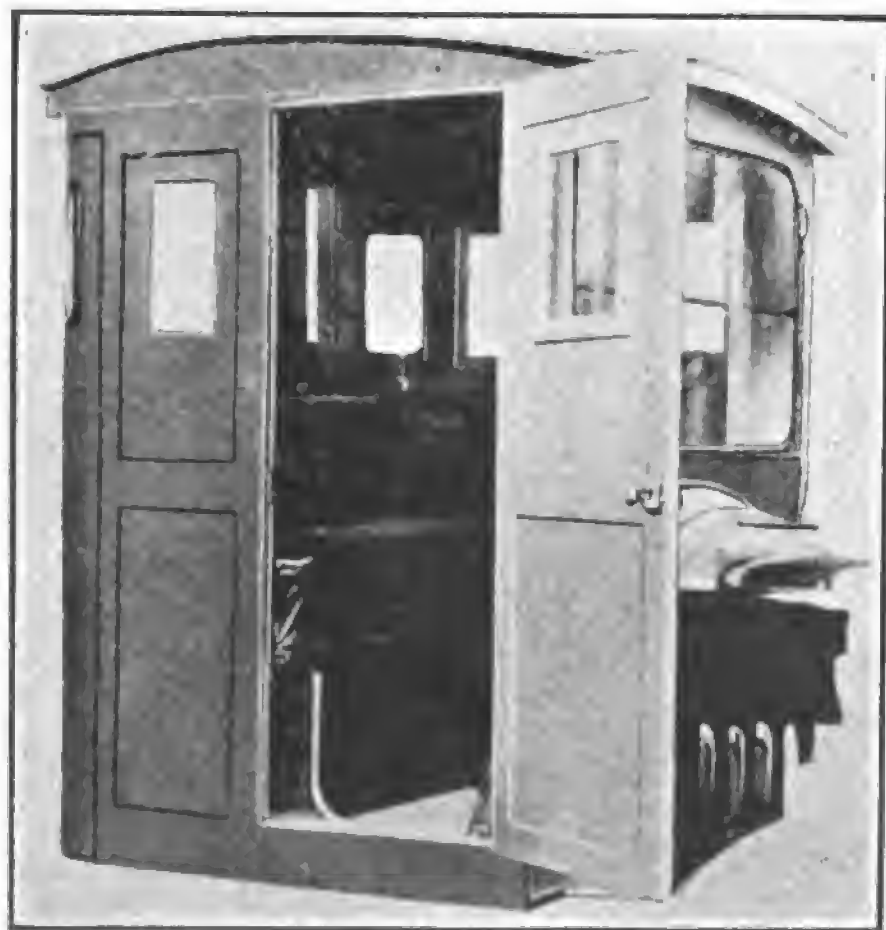
Tailboard Forms Runway.

Mr. Dumas' truck is equipped with a cattle body, eight feet wide. The stakes, which are four feet high, are removable. There is a drop tailboard, 2½ feet high, with cleats. When the tailboard drops a runway is formed for the cattle to march into the truck. A canvas top is used.

Working 24 hours some days and as high as 15 and 20 on others, Mr. Dumas naturally has no time to keep cost records. He does not try to figure how many miles he runs in a week, a month or a year. The only hint at mileage extending over any period is that produced by the wearing out of a set of solid tires in less than 10 weeks. Mr. Dumas feels in his heart that these tires gave all the service that could be expected. He knows the great distances they traveled and the roads they were driven over. Anyone familiar with the life of a good solid tire can figure for himself how many miles the Republic toured in those 10 weeks. Multiply it by five and the approximate yearly mileage may be ascertained.

Mr. Dumas did not always drive his own truck, but he will do so henceforth. When piloted by others his machine was often in the repair shop when most needed. He has driven the new Republic himself and she has been around every morning asking for work. He drives slowly, but keeps moving and covers more ground in a day than the fellow who hits it up in spots and then lays off awhile. Mr. Dumas does not know what it is to have an accident. He feels that he will have lost his hand for repair work before he gets a chance to practise that art again.

Mr. Dumas didn't say so but he quoted some of the prices he gets for his work and there is little doubt that this machine has already paid for itself. Good service is nothing more than what this man deserves from his equipment because he cares for the truck as though it were human, works long hours, deals fairly with all who employ him and merits whatever financial reward is won by the Republic and its pilot for the house of Dumas.



The Acme Standard Cab for Cold Weather, Showing Comfort for the Driver.

STANDARD TRUCK CAB FOR COLD WEATHER PUT ON MARKET BY ACME CO.

Realizing the demand for an enclosed cab for cold weather, the Acme Motor Truck Co., Cadillac, Mich., has developed a standard model which can be furnished for any truck manufactured by them. The new type, like the standard Acme open cab, is substantially constructed of high grade materials, is well ironed at points of stress and the workmanship throughout is excellent.

Side sections consist of waterproof veneer panels, curving towards the rear with curved sheet metal corner construction running full height as in the open cab. An opening 5¾ by 11¼ inches, as illustrated in the accompanying views, is provided in each corner. This is fitted with Pyralin so the driver has a clear view of traffic approaching from either side. The back of cab is fitted with sliding windows, easily closed and opened for ventilating purposes. Each side panel has a 6 by 11 inches Pyralin light. The doors run full height of cab, with a 9 by 11 inches Pyralin light, which can be increased approximately to 10 by 15 inches. Doors swing toward the front and are provided with lock designed to prevent rattling. The top follows the standard Acme cab construction, curved as shown in picture and substantially built of ribs and slats covered with a heavy grade of oil duck.

The general dimensions of cab are as follows: Width, 48 inches; height from top of frame, 61 inches; depth from front to rear, same as standard cab; height from top of cushion to inside of roof, 40 inches; ventilating windshield, length, 41¼ inches; ventilating windshield, height, 23½ inches.

The seat is well upholstered on sides and rear and is provided with a deep cushion, making a roomy, comfortable cab for winter use. The cab lists at \$125.

2700-MILE HAUL BY TRUCK.

The Consolidated Trucking Co., Troy, N. Y., recently made a round trip haul of 2700 miles with a three-ton White truck. The Troy Foundry Co. was in dire need of molding machines for an addition to its plant. On its way to Milwaukee the truck carried a full load of castings to the Wright Cutter Co. of Chicago. That city was reached in eight days.

NEW WALTHAM TRUCK.

The Waltham Motors Corp., 30 North La Salle street, Chicago, has purchased all the land, buildings and equipment of the Victor Truck & Trailer Co. and will produce the Victor 1½-ton truck under the trade name, "Waltham." A production of 500 trucks a year is contemplated. The price of this truck, known as model E, will be \$2500.

LUMBER AND SUPPLY CO. GETS BIG RESULTS FROM 19 TRUCKS.

The utility of the motor truck and its sturdy accessory, the trailer, is seldom better exemplified than in the case of the Consolidated Lumber & Supply Co., Indiana, Pa., which operates a fleet of 19 trucks ranging from one ton to five tons capacity. This concern does a varied line of hauling, the volume of which is well beyond the range of a mammoth drove of horses.

For instance, a five-ton Selden motor truck with a five-ton trailer makes three 12-mile round trips daily, hauling 4000 feet of logs per trip. This means a total of 36 miles traveled and 12,000 feet hauled from woods to mill. They also operate a 2½-ton Selden without trailer which makes four trips daily with 1000 feet of logs, making a total of 48 miles traveled and 4000 feet hauled.

Another 2½-ton hauls sawed lumber from mills to town, making two 32-mile trips daily with 1900 feet, a total of 64 miles traveled and 3800 feet hauled. During the last month this truck alone has hauled 80,000 feet of lumber.

They have also 13 one-ton trucks, making continuous trips from their plant to the mines and from mine to mine. The longest trip being 19 miles and the shortest six miles. These trucks haul all kinds of supplies, lumber, brick, cement, lime, hardware and explosives, also motors, motor parts and machinery. They also operate on this same work three two-ton trucks, which are used mostly for hauling coal, sand and gravel.

TRUCK PAYS FOR ITSELF TWICE EVERY YEAR.

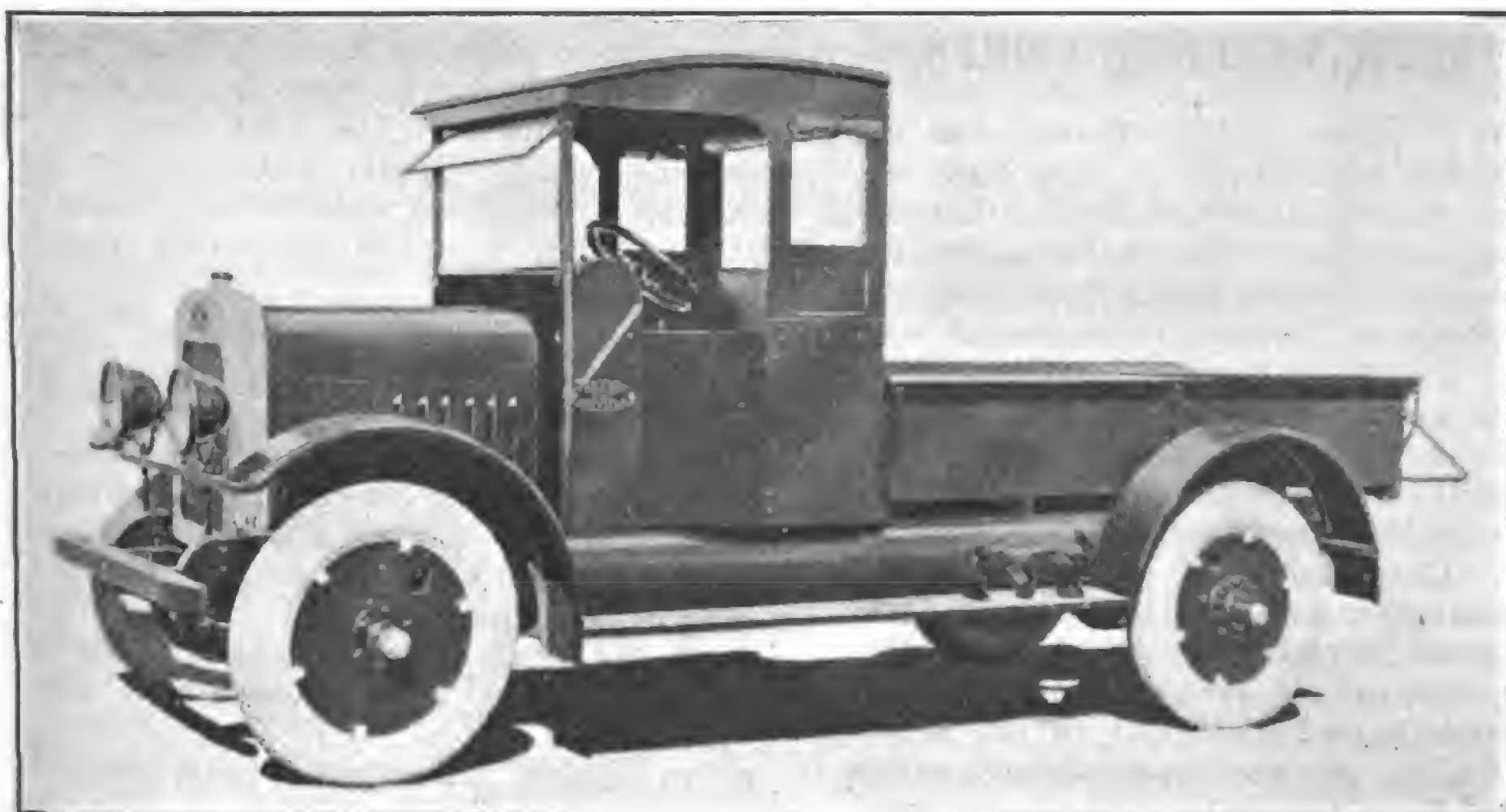
The Imperial Japanning & Enameling Co., 416 W. Grand Avenue, Chicago, figures a saving of \$5500 a year on a one-ton Service truck, which is equivalent to 5½ per cent. on an investment of \$100,000. The company estimates that it would take four single horse rigs, costing \$600 each, to do the work done with the one-ton truck. A single rig team is charged for at the rate of at least \$7.50 a day, the rate often going as high as \$10. Four would cost at least \$30. The operating cost of the Service truck, including driver's salary, interest, depreciation, taxes, license, insurance, garage rent, etc., is \$11.74 a day. The truck works 305 days and a saving of \$18 a day means \$5500 in a year.

In addition to doing the work better the management also believes that the truck is an advertisement of progress. The truck cost \$2440 and, therefore, pays for itself twice yearly.

BUDA REDUCES PRICES.

The Buda Co., Harvey, Ill., has reduced the prices on its engines \$10 to \$15 per unit. This step was taken as part of the general plan to stabilize the automobile industry.

GRAMM-BERNSTEIN SPEED TRUCK



The Model 10 Gramm-Bernstein Speed Truck, Chassis Being Complete with Cab and Express Flareboard Body.

A N NOUNCEMENT is made by the Gramm-Bernstein Motor Truck Co., Lima, O., of the approval of the design of a chassis having load capacity of 2000 pounds, which is now receiving its final tests, and which will be produced commercially beginning about Jan. 1. This machine differs from other Gramm-Bernstein trucks in that it is designed especially for fast driving and claim is made that it has a maximum road speed of 45 miles an hour. While having exceptional speed the chassis is built to meet the hard service to which trucks are subjected.

Emphasis is made that the machine is extremely simplified and accessible, this making for minimum labor when adjustment or restoration is necessary and insuring to the owner the largest degree of truck service with unusually low upkeep. While the design follows conventional engineering in essentials, numerous details have been given careful attention with the object of obtaining long endurance, positive control and every practical device that will add to the convenience and comfort of the driver.

Truck Type Special Engine.

The engine is a four-cylinder, water-cooled, L-head type, with cylinder bore of $3\frac{1}{2}$ inches and stroke of five inches, that is rated at 19.6 horsepower by the S. A. E. formula. The cylinders are cast en bloc with the water jacket integral. The head is removable and liberally water jacketed. The design has one feature that is exclusive and that is the valve tappet guides are so constructed that carrier may be removed from the engine as a unit with the guides and tappets, so that in the event of need these may be examined or adjusted conveniently on a bench and without further disassembly of the engine.

The engine is cooled by a thermo-siphon circulation of water through the cylinder jacket and a radiator constructed with a cast metal shell with a cooling section of copper tube with continuous brass fins, that is mounted on springs. The claim is made that the ra-

diator is unusually efficient. Cooling is promoted by a 16-inch, four-bladed fan that is mounted on a Hyatt roller bearing and driven by a flat belt from a pulley on an extension of the magneto shaft. The engine is lubricated by a combination force feed and splash system, the oil being drawn from the reservoir by a gear-type, gear-driven pump.

The Power Plant Auxiliaries.

The fuel is supplied through a Stromberg carburetor by gravity from a 15-gallon tank located on the dash. The ignition current is supplied from a storage battery to a Connecticut distributor with an automatic circuit breaker that insures against battery exhausting. The chassis built for export are equipped with high-tension magnetos. The exhaust manifold of the engine has a hot spot and the carburetor is supplied by air through a stove and a cored passage in the cylinder block, so that the fuel is thoroughly preheated and a high ratio of engine efficiency is obtained.

The engine is also equipped with an electric Auto-Lite generator and this supplies current to the Exide storage battery and to the lamps. The engine, combined with the clutch and the transmission gearset, is mounted at three points, on a trunnion on a forward cross member and on support arms on the side members.

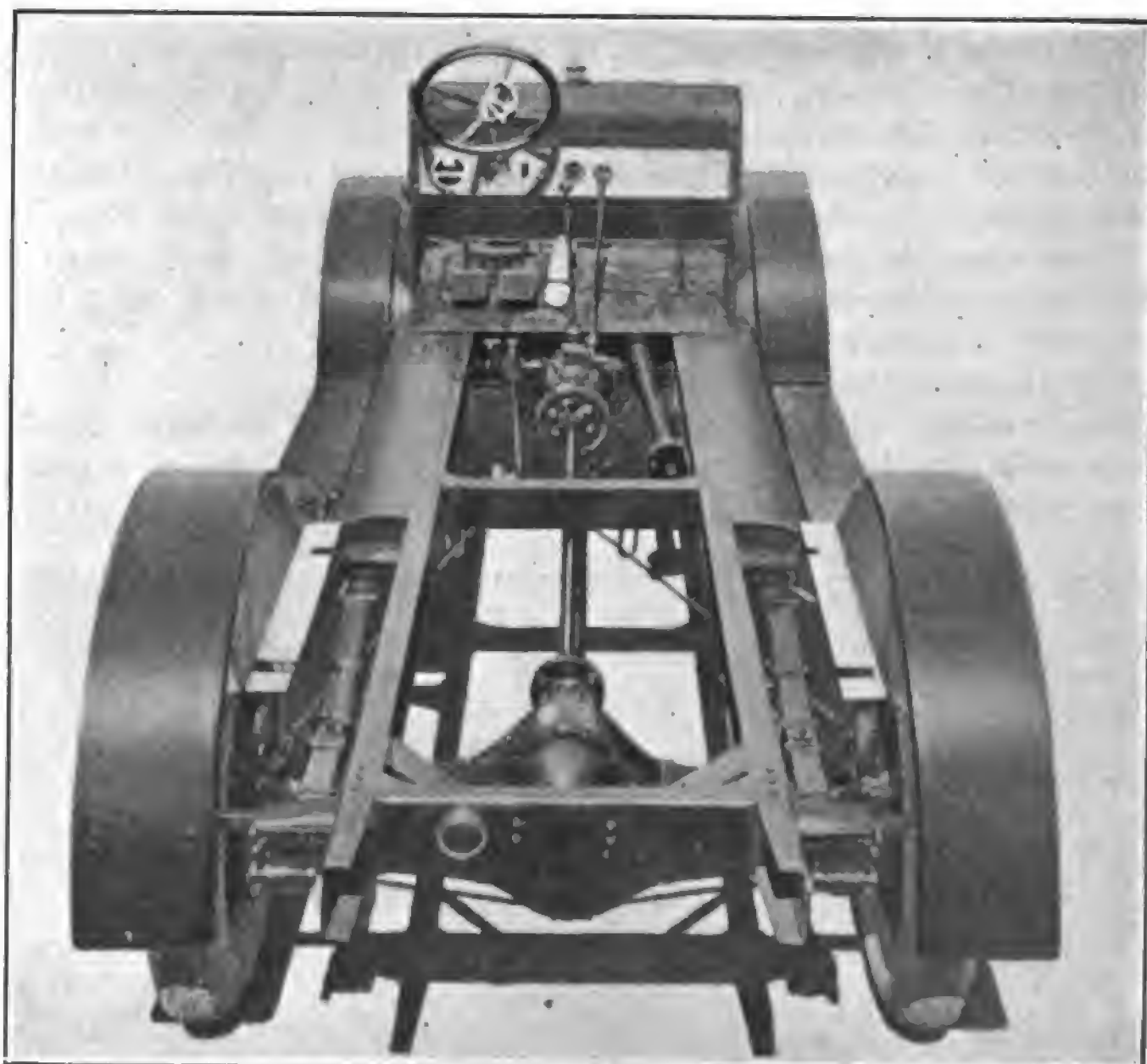
The clutch is a 10-inch dry plate type, which is mounted on a 10-spine shaft, and the transmission gearset is a selective sliding gear

type, having nickel steel shafts, mounted on double row annular ball bearings, with Hyatt roller bearings carrying the main shaft at its division in the gear case. The gears are large with $\frac{3}{4}$ -inch faces. The power is transmitted through a single-section tubular shaft to the pinion shaft of the bevel gear driven three-quarters floating rear axle. The shaft has a large flexible disc joint at either end, which obviates lubrication.

The rear axle housing has a cast central section with removable plates, and the outer ends are heavy drawn steel tube. The housing is also stiffened by a truss rod securely anchored. The differential gearset is mounted on the rear cover plate and it may be removed as a unit after the driving shafts have been withdrawn from the axle. The driving shaft pinion and the master gear are helical cut and are claimed to be noiseless. The shafts and all gears of the gearset are nickel steel and heat treated. The pinion shaft, differential gearset and the wheels are mounted on large double-row annular ball bearings. The axle has $10\frac{1}{4}$ inches road clearance. The front axle is an I section drop forging, heat treated, and the wheel spindles are fitted with Timken roller bearings.

Aeroplane Type Wood Disc Wheels.

The wheels are an aeroplane type, constructed of wood discs, with nine laminations forward and 11 laminations rear, which are claimed to be far stronger than the spoke construction, and claim is made for these that tire life is considerably prolonged. The frame is a semi-flexible construction, of pressed steel channel section five inches deep, with webs $2\frac{1}{2}$ inches width, of $\frac{3}{16}$ material, and there are three cross members with gusset plates and heavy diagonal braces at the rear end. All holes



Rear View of the Model 10 Chassis, Showing Sturdy Brace, Simple Braking System, Flexible Universal Joints, Etc.

are drilled and the assembly is by hot riveting.

The frame is mounted on Perfection semi-elliptic springs, the forward set being 38 inches long and two inches wide and the rear set 50 inches long and 2¼ inches wide. The springs are a cup type and they are fitted with oilless bronze bushings and the bolts are hardened and ground. The driving and braking stresses are through the rear springs. The front end spring hangers are separate castings on which are mounted the lamp and fender brackets, and the channel steel bumper. The springs under load are approximately flat.

The steering gear is an irreversible fore and aft worm and nut type, with means of adjustment to compensate wear, with an 18-inch hand wheel. This is mounted at the left side. The linkage is heavy. The control is conventional. The service brake shoes are integral expanding within drums 16 inches diameter and two inches wide on the rear wheels, with cable linkage and a pulley-type equalizer. The emergency brake is a contracting band type and is located on the main shaft directly back of the transmission gearset case. The service brake adjustment is simple and is unusually efficient.

The chassis is equipped with a driver's seat, full fenders and running boards, Auto-Lite electric lighting and starting system, speedometer, compression whistle, bumper, jack, full set of tools, front and rear license brackets, and one spare rim. A power tire pump will be installed as an extra. The regular tire equipment is 33 by five-inch pneumatic, the rear tires cord, mounted on Firestone rims. The dash and fenders are heavy pressed steel and the fender braces are channel steel. The hood is three-section, the sides being removable.

The wheelbase is 128 inches and the loading space 96 inches and the turning radius is 20 feet. The chassis complete weighs 2370 pounds and the body allowance is 750 pounds. The maximum speed is 45 miles an hour. The price is \$1495. The complete truck is listed in 16 combinations for bodies and the highest price is \$1780, this including painting.

The bodies practical for use with this chassis include flareboard express, standing top express, grocers' double-deck basket rack, stock rack, grain tight box, screen-side standing top express, stake platform, slatted stake, standing top passenger, omnibus. Storm curtains are included with the tops and door curtains that open with the doors.

NEW YORK CITY IS FIRST IN LINE WITH POLICE MOTOR TRUCK RESERVE CORPS.

The Police Motor Truck Reserve Corps has been formed in New York city under the direction of Police Commissioner Richard E. Enright to assist and cooperate with the police department in the event of strikes, riots, major accidents or other emergencies affecting the public welfare.

E. Leindorf, head of the Leindorf Motor Sales Corporation, motor truck distributors, has been named honorary captain. Capt. Leindorf, who is a truck manufacturer and distributor, and Commissioner Enright, have held many consultations on the subject and these conferences have borne fruit in the actual formation of an organization which should be to the police department what the Motor Transport Corps was to the army during the war.

A point which should not be overlooked is that this step means more than the mere furnishing of transportation in cases of riots, strikes or other unusual happenings. It means that the people themselves are behind the police in the task of maintaining the safety and security of the public. The thousands of drivers who enlist in this cause will feel that they are a part of the police force and will be apt to drive more carefully and have greater consideration for their fellow beings.

What New York city has started might well be taken up by other cities. It costs nothing and is bound to be productive of great good.

A letter to motor truck owners sent over the joint signature of Commissioner Enright and Capt. Leindorf says in part: "The object of the Police Motor Truck Reserve Corps is to assist the police department in any emergency, by transporting men and supplies wherever necessary or in any other manner to aid the department when called upon by the commissioner.

"All public spirited motor truck owners in this city are invited to join this organization. Membership entails no obligation other than listing of trucks and drivers with the organization, to be called upon only in time of dire necessity."

The General Motors Truck Co., Pontiac, Mich., is expected to resume operations in full on Dec. 1.

DENBY SALES CHANGES.

The Denby Motor Truck Co., Detroit, has reorganized its sales staff under General Sales Manager L. B. Graham in order to give better backing to the distributor and dealer. The field force is being constantly augmented that district men may be in direct touch at all times with the men who are marketing the Denby product.

The Denby executive staff follows:

L. B. Graham, general sales manager, directing domestic and foreign sales.

E. T. Sutton, special factory representative, in charge of Middle West and Southern states, with headquarters at the Detroit office and assisted by the following district managers:

A. S. Morsman, travelling Iowa, Kansas and Missouri, with headquarters at St. Louis.

C. C. Singer, travelling Texas, with headquarters at San Antonio.

P. N. Edwards, working under special instructions from Detroit office.

Marshall P. Myles, travelling Oklahoma, with headquarters at Tulsa.

L. P. Montmorency, travelling Mississippi, Tennessee, Alabama, Georgia, Florida and South Carolina, with headquarters at Nashville.

J. F. Holleran, travelling Louisiana and Arkansas.

G. W. Werden, export manager, with headquarters at New York City.

M. E. McKenney, Pacific coast manager, at San Francisco, Cal., in charge of Pacific coast territory, assisted by Ross Waffle.

R. J. Monroe, Northwestern manager, with headquarters at Portland.

J. H. Sharkey, North Atlantic states manager, with headquarters at New York city.

Other important changes include the appointment of L. B. ("Doc") Miles as manager of service and W. H. Herbert, former assistant sales manager, to manage the Detroit factory branch.

TRUCKS BEST WHEAT HAULERS.

The motor truck is fast superceding the horse and wagon in transporting farm products to market in Colorado. The wheat growers, especially, are turning in droves to the truck, which proves speedier, more efficient and more economical.

The grower of wheat is enabled to haul his grain a long distance when his farm is far from the market and is also able to seek a more profitable market beyond the point where he formerly sold his wheat at a minimum price.

The accompanying cut shows two views of an Acme two-ton truck owned by M. A. Morford, Greeley, Col., which is engaged in hauling wheat from the thresher. Mr. Morford declares this to be a typical scene in Colorado nowadays.

Schmidt & Storck Wagon Co., West Bend, Wis., manufacturing heavy duty wagons, trailers, etc., has let the contract for a one-story brick and concrete factory, 100x270, to cost \$90,000.



Acme Two-Ton Truck Hauling Wheat in Colorado.

ACTIVITIES IN ASSOCIATE INDUSTRIES

AMERICAN BOSCH MAGNETO UNFILLED ORDERS ARE NEARLY \$7,000,000

American Bosch Magneto Co., Springfield, Mass., had unfilled orders amounting to \$6,757,200 on hand Sept. 30, compared with \$5,442,381 on Jan. 1. This is \$775,000 in excess of the total sales for 1919. September shipments were over 20,000 magnetos, against a monthly average of 17,256 last year. Overhead was cut more than 17 per cent. during the month. Current assets total \$6,185,225, including \$403,000 in cash, being equal to about four times the current liabilities. The sales contract under which American Bosch is to market Gray & Davis' output provides a payment of 10 per cent. of net sales, which are running at an annual rate of from \$2,500,000 to \$3,000,000.

REDUCTION IN WAGES.

The Leece-Neville Co., Cleveland, O., manufacturer of starting-lighting systems for motor vehicles and motor boats, put a 20 per cent. reduction in wages into effect at its factory Oct. 21. The company employs 200.

The Malleable Iron Co., and the Wagner Castings Co., both of Decatur, Ill., have reduced wages in order to meet a demand for a cut in the price for parts from the Ford Motor Co., Detroit, a large order being contingent on the reduction. The employees were informed that the size of the force would be greatly reduced unless the new wage scale was accepted.

BODY PLANT TO GREEN BAY.

The American Automobile Body Co. has decided to locate its factory at Green Bay instead of Appleton, Wis., the change being due to the fact that Green Bay, which has a large truck plant, is without a body factory, while Appleton has three. Earl and Willard Fraser prominent lumber manufacturers of Northern Wisconsin, and John Perry, all three being from Appleton, are the organizers of the company.

LIMA SHEET METAL PLANT.

The Lima Sheet Metal Products Co., Lima, O., is starting work on a new factory that is to be rushed to completion. It will provide 23,000 square feet of floor space. The capital of this company is being increased from \$50,000 to \$300,000.

ACKLING CO. TO BUILD.

The Ackling Stamping Co., Toledo, O., is to build a fireproof factory employing 750. The company's capital of \$50,000 has been doubled.

AMERICAN RING CO. OUTPUT.

Recent factory expansion has enabled the American Hammered Piston Ring Co., Baltimore, Md., to reach a daily production of 50,000 rings. An order for 15,000 rings has been received by this company through its export department from Honolulu, Hawaii. The headquarters of the export branch are at 47 Broadway, New York city. J. E. Sitterly has been named foreign sales manager.

CUT IN TRUCK BODY PRICES.

The Martin-Parry Corporation, Indianapolis, Ind., one of the leading truck body manufacturers, made a substantial cut in its product Nov. 1, announcing that it was done in pursuance of the general trend in that direction, although the cost of hardwood lumber and labor has not been reduced.

NEW YORK BEARINGS CO. EXPANDS.

The New York Bearings Co., 311 W. 50th street, New York city, has increased its capitalization and its first important step in the enlargement of its bearing manufacturing and regrinding business has been the purchase of the large plant of the R. and L. Bearing Co. in Long Island city.

GOODYEAR MAN HOME.

Lucien L. King, advertising manager for the Goodyear Tire & Rubber Co., Akron, has arrived home from Europe, where he spent five months studying foreign markets and general business conditions.

ELECTRIC BATTERY EARNINGS.

Electric Storage Battery Co., Philadelphia, Pa., reports net earnings from sales the first five months of the year of \$2,094,081. The company has a profit and loss surplus of \$15,241,425.

BONUS TO EMPLOYEES.

The Detroit Metal Castings Co. has increased its capitalization from \$60,000 to \$1,300,000, the increase to be used as a stock dividend and also for a stock bonus to employees.

ROWE BUYS BODY PLANT.

The Rowe Motor Manufacturing Co., Lancaster, Pa., has purchased the plant and assets of the Lancaster Body Co. and will operate the factory as its body department.

Many power haulage concerns who do not have regular use for trailers find it profitable to have one or more on hand, these vehicles paying for themselves with a few large hauls. They are speedy and economical in rushing through a big job.

TRUCKS AND DEMOUNTABLE BODIES EFFICIENT AT MARINE TERMINALS

The motor truck and the demountable closed auto truck body were indorsed for use at marine terminals in handling strictly intercoastal cargoes at the annual convention of the Association of Port Authorities of the Pacific coast held recently at Seattle, Wash. The system now in use at Cincinnati will revolutionize methods of handling freight at all railroad transfer points, the delegates agreed.

"THE PETROLEUM OUTLOOK."

Arthur D. Little, Inc., chemists and engineers, 30 Charles River road, Cambridge, Mass., will forward on request to bankers, brokers, manufacturers and investors copies of their monograph on "The Petroleum Outlook" as long as the limited number of copies last. This is a skillfully prepared and neatly bound publication, with maps and charts, which gives an expert survey of the petroleum situation. The American fields are put in the forefront and there is an illuminating discussion of the status of the numerous oil fields.

The text, written in popular style, deals with the geology, production history and apparent state of exhaustion of our petroleum resources and may readily be understood by any intelligent layman. It is an impartial, forceful presentation of the petroleum problem without reference to the companies or interests that own or operate in the respective sections. It ranks among the most complete and interesting publications for the lay reader that has been issued upon this subject.

TO MAKE STEEL PRODUCTS.

The American Steel Products Co., Johnstown, Pa., recently formed with \$300,000 capital, is to produce automobile accessories, steel and aluminum articles. The company purchased the foundry of J. V. Hughes & Co., New Florence, Pa., and a two-story structure adjoining. The latter is being remodeled and equipped with modern machinery.

STEAM DRIVEN TRUCKS.

Duncan Macdonald, president of the Gearless Motor Corporation, Pittsburgh, has resigned and has cast his fortunes with the Garfield Steam Truck Corporation, which plans to manufacture steam driven trucks, tractors and omnibuses on a large scale.

Henry Ford denies a report that he has purchased the Muskegon, Mich., plant of the Continental Motors Corporation.

THE TRUCK AND THE HIGHWAY

GOVERNMENT HELPS STATES IN PREPARING FOR SNOW REMOVAL THIS WINTER

The Bureau of Public Roads of the Department of Agriculture has made a survey of the situation regarding snow removal in the states east of the Mississippi and north of the Potomac. An engineer of the bureau has conferred with the highway commissioners in the states in this territory, and reports that definite plans have been made in New Jersey, Pennsylvania, Michigan, Indiana and Illinois which will result in the main trunk lines being kept open all winter. In some other states, notably in Ohio, snow removal is the duty of the counties, and while the state highway department is prepared to assist the counties in every way and is urging the necessity of the work, it is not empowered to initiate the work.

In some of the states snow fences will be placed for the winter 50 feet from the highway, to stop the snow before it reaches the road. These "fences," which are made of slats, are tipped backward until they form a decided angle and then are braced like bill boards. In the spring the sections are unbolted from the stakes and stored by the state highway commissioner until winter. This type of fence has been used by many railroads in the past during the months of snow, and has proved very effective as a snow guard to the roadbed.

In other localities snow plows, either horse or motor drawn, will keep the state highways clear. One of the most efficient type of highway snow plow has a broad blade, which removes the snow, attached to the front of a motor truck. A second truck chained to the first pulls while the first pushes the blade.

TO CHECK UP TRUCKS.

Public service commissions in Pennsylvania, New Jersey, Delaware and Maryland are planning to check up trucks hauling freight between these states. Drivers must be armed with the necessary licenses and certificates of operation. Inquiries will be made as to the manner in which the rules of the road are observed and data will be taken as to the damage done to the highways by trucks. It is expected that a similar censorship of trucks running from and to the Pittsburgh district to and from Ohio and West Virginia will be employed.

CLEVELAND-AKRON HIGHWAY.

Officials of Cleveland and Akron met recently at the Cleveland Chamber of Commerce and launched a campaign in behalf of the building of a great inter-city highway between the two cities, between which there is a mammoth volume of traffic.

GOOD HIGHWAYS AN ESSENTIAL OF TRUCK TRANSPORTATION.

"Manufacturers in large cities and industrial centers are coming to realize more than ever the use they will be expected to make of their trucks and fleets in the approaching months. The railroads are tackling the biggest job they have ever had and it is up to the motor truck to see them through," said E. A. Williams, Jr., president of the Garford Motor Truck Co., in a recent interview.

In discussing the recent crop harvest he said that there were farmers who had actually lost money through inability to move their farm products, due to the poor condition of the highways. In his opinion radical changes are necessary in modern highway conditions and he felt that an accelerated drive for better roads is a step of vital importance to the farmer, as well as to the automotive industry.

"TWO-SLAB" HIGHWAY.

The new "two-slab" concrete highway, an experiment in road building, was opened in Contra Costa county, between Walnut Creek and Danville, California, early this month and reports regarding the results are anxiously awaited. The highway consists of two eight-foot concrete roadways, with four feet between them macadamized and oiled. County Engineer Arnold is confident the new construction will prevent accidents for the white concrete slabs will be easily followed and being better highway than the macadam strip between will be followed in proper direction by motor cars.

CONCRETE IDEAL HIGHWAY.

The Lincoln Highway association announces that it will use concrete in the construction of its proposed ideal section of the Lincoln highway. The object of the plan is to present an object lesson of the best possible road for continuous motor traffic. The location of the section has been narrowed down to a point in Pennsylvania, one in Ohio and one in Western Indiana. Many valuable suggestions have been received by the association's technical committee regarding methods, drainage, width and paving methods. For the material the opinion was largely in favor of concrete.

TRUCK TRANSPORTATION PEER.

The motor truck proved a more efficient and economical transportation medium than parcel post, express and freight in a recent test conducted by the Atlanta Automobile association. The trip was from Atlanta to Macon, a distance of 92 miles, of which but 12 miles are good roadway. The truck made the trip faster and cheaper and proved that it could go both ways while any of the other agencies were making a shipment in one direction.

ADVERSE REPORT ON PLAN TO HAUL MILK FROM FARMS BY THE PARCELS POST

Herbert F. French, chief clerk of the New England Railway Mail Division, with headquarters at Boston, who was recently instructed by the Fourth Assistant Postmaster General to investigate the matter of hauling milk from the producers to the cities by parcels post has completed his probe and rendered his report, which is to the effect that the plan is impractical.

Mr. French finds that the parcels post system cannot compete in rates with the railroads, the trolley freight or motor truck service. The government could not provide the necessary refrigerating facilities economically and, in general, the milk haulage question is distinctly outside its province.

TO TEACH "RULES OF ROAD" IN SCHOOLS.

The text book committee of the Highway Transport Education Committee of the Bureau of Education has formulated plans for a campaign designed to teach children the "Rules of the Road," and will soon start work with a view to interesting school officials throughout the country. The work as proposed will start with the kindergarten, where the child will be taught to exercise care in crossing streets, always waiting on the sidewalk until he is sure that nothing is approaching within half a block. Later, as the child progresses to the elemental grades, the course will be broadened and the element of personal responsibility will enter into the study. The course is expected to have the cooperation of parents, and according to those who have looked into it seems a fair step in the right direction.

MICHIGAN TO FIGHT SNOW.

The state highway department of Michigan has a number of tractors and rotary plows on hand and will meet the first snow storm of the winter half way and continue the fight to keep the highways clear until spring. County, city and town highway departments are to cooperate in the work of keeping the highways in condition for travel, particular attention being paid to truck roads.

\$800,000 FOR KENTUCKY ROADS.

Secretary Meredith of the Department of Agriculture has granted Federal aid to the extent of \$800,000 for road building in Kentucky. This is the largest award made to a state in the present fiscal year. The state will match this sum, making over \$1,600,000 available for Kentucky roads, the coming year.

TRUCK OUT-COMFORTS PULLMAN CAR

A new style in vacations which promises to gain popularity has been set by G. L. Price, a wholesale dry goods merchant of Knoxville, Tenn., who, tired of stuffy railroad trains, and auto tours with their round of badly serviced hotels, fitted up a 2½-ton Paige motor truck in a manner that would put a Pullman car to shame and then proceeded, with friends, to enjoy the comforts of life on a pleasure trip to Los Angeles, Cal.

The Paige truck was equipped with all the conveniences of a home, even to electric lights and shower bath, and fully recompensed Mr. Price for all the joys of vacation travel that had previously been denied him.

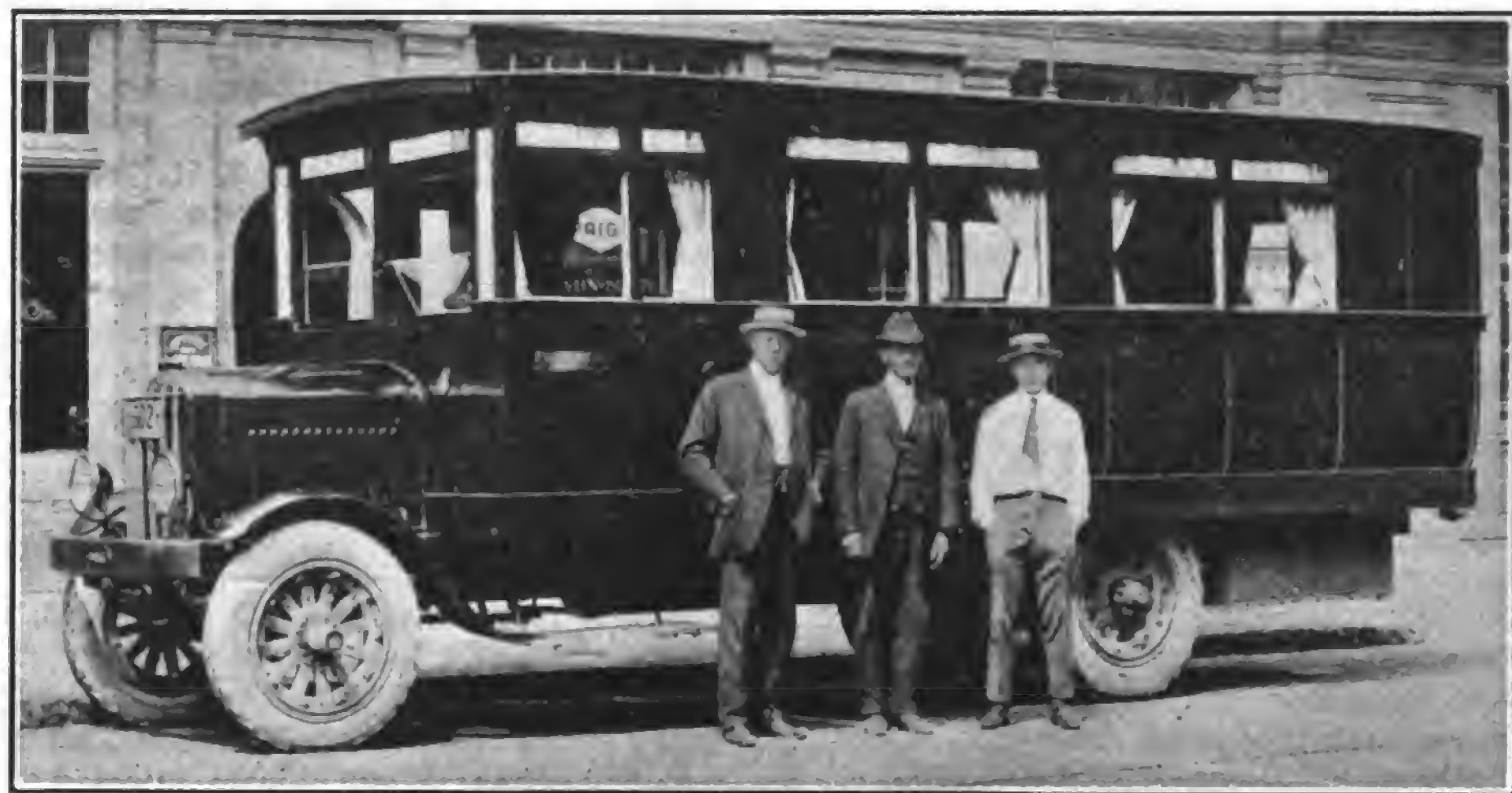
Built without of steel and within of sturdy oak, with eight Pullman-like chairs that are convertible into lower and upper berths, with a kitchenette, dining compartment, running water, shower bath and electric lights, this unusual conveyance is best described as a portable palace.

It was in this wheeled domicile that Price, with his wife and son and five favored guests toured for seven weeks during the past summer, enjoying the delights of traveling without any of the customary disadvantages.

The appointments of the luxurious vehicle show the carefulness with which its builder, G. L. Price himself planned for the comfort of its occupants.

Between the seats of the car are cunningly devised boards which, when lowered, serve as tables or desks. Likewise, between the seats, are lockers, where clothes may be packed. The interior of the car may be converted at will into two separate compartments for the convenience of the ladies in the party.

The kitchenette boasts a three-burner stove and oven, pantry, sink and running water which, by means of compressed air, is pumped from a 52-gallon tank beneath the chassis. This water is also piped to the shower bath and lavatory.



Paige 2½-Ton Chassis, Equipped with All the Comforts of Home in Which a Knoxville Merchant and Friends Toured to Los Angeles, Cal.

As it stands the bus weighs 11,000 pounds, mounted on the chassis of a 2½-ton Paige truck. Gasoline consumption averages a gallon to every six miles. The cost per mile is, therefore, surprisingly small when divided among eight passengers.

So pleasureable was Price's vacation in his unique vacation car that he is sold on the idea of vacations for all time to come.

In fact, his second annual vacation is already definitely scheduled—a trip to Florida in the "palace on wheels."

BETTER TIMES COMING, THE SIGNS SHOW

BILLIONS FOR EQUIPMENT

IF FARMERS RECEIVED

FAIR PROFITS

With agriculture on a normal profit basis of six per cent. the American farmer would provide an eight billion dollar market for automotive equipment during the next decade, according to figures recently compiled by Frank G. Odell, director of research for the Capper Farm Press. Of this a billion would go for tractors, two billion for electric light and power plants, a billion for automotive farm equipment and agricultural machinery, two billion for trucks and two billion for passenger cars. In addition two billion would be spent for silos and dairy equipment.

These estimates were furnished at a meeting of supporters of the Farm Loan Act which has been attacked by various interests. It was pointed out that farmers have mortgages aggregating four billions, a debt which they propose to extinguish over a long term of years. A fight is being waged to save the Farm Loan Act so that by this means financial assistance may be obtained.

These facts suggest that the saturation point for trucks is yet far away.

MANUFACTURING SAMSON TRUCKS AT JANESVILLE, WIS.

Commencing Dec. 1 Samson trucks, as well as Samson tractors, will be manufactured at the works of the Samson Tractor Co., the General Motors Corporation subsidiary at Janesville, Wis. This plant has recently been expanded so that it can now handle the truck production as well as the tractor output. These trucks have formerly been manufactured and assembled at various plants.

\$20,000,000 BODY MERGER.

The American Motor Body Co., Detroit, is a \$20,000,000 corporation resulting from a merger of the Wadsworth Manufacturing Co., Detroit, and the Hale & Kilburn Corporation, Philadelphia. The Hale & Kilburn Corporation gets preferred and common stock in exchange for its plant and business, but continues to act as a holding company.

PARTS COMPANY EXPANDS.

Ramstack & Sons Manufacturing Co., 1826 Brown street, Milwaukee, Wis., has increased its capitalization from \$100,000 to \$200,000 and will enlarge its facilities for manufacturing spark plugs and other gas engine specialties.

PACKARD PROFITS NEARLY

MILLION MORE THAN IN PRECEDING YEAR

The Packard Motor Car Co., Detroit, reports for the fiscal year ending Aug. 31 net profits available for dividends of \$6,395,468, an increase of nearly \$1,000,000 over the preceding year. After providing for preferred dividends the earnings shown in the current report were equal to 45.15 per cent. on the \$11,885,100 common stock. In the previous year the earnings were equivalent to 41.16 per cent. on the \$11,840,930 common stock then outstanding.

The balance sheet shows current assets of \$40,116,590, against current liabilities of \$12,442,005. In the 1919 report the current assets were \$46,271,681, with current liabilities of \$18,131,165. Inventory account shows an increase of nearly \$11,000,000, the figure for 1920 being \$29,359,327, against \$18,051,749 in the preceding year.

The statement shows that the company sold during the year \$19,583,668 of Liberty bonds and certificates of indebtedness. A reserve of \$2,500,000 is shown among liabilities to provide against possible shrinkage in value of materials.

TRUCKS SAVE LIVES AND LABOR

CHILD WELFARE CAMPAIGN IN NEW YORK STATE IS CARRIED ON BY TRUCK

The Department of Health of the State of New York is using a Healthmobile as a weapon to carry the fight against disease into the rural districts. This move is taken advisedly, as figures show that there is more disease in the country than in the city.

This Healthmobile is one of the latest utility outlets for the motor truck. The machine is a $\frac{3}{4}$ -ton GMC truck, with a special body. In the truck have been installed a Delco $\frac{3}{4}$ kilowatt generator and a Powers projector, fitted to run on this current, which makes the travelers independent of local sources of electricity. A large variety of screens and a big assortment of films are carried.

This machine has been used the past summer in an intensive Child Welfare campaign. One day stops are usually made at each point. The morning is usually given over to moving and setting up and children are examined in the afternoon. Three physicians and two nurses conduct these examinations. Youngsters from six months to six years are examined and an effort is made to have their physical condition remedied by local physicians.

In the evening a public meeting is generally held in a church or grange hall. The projector is set up indoors and the current carried from the generator in the Healthmobile by means of a long electric cable. Motion pictures are shown and health talks given.

It is planned to make five stands a week. Saturdays and Sundays are days off, except that a meeting called off dur-

ing the week is usually held on Saturday. Up to Oct. 28 the party had covered Livingston, Chenonga, Orange, Tioga and Fulton counties, and was working in Schoharie. The outfit will be kept on the road as long as weather conditions permit.

While the accompanying illustration shows the projection of the pictures on the roof of the car, and this is possible, it is generally found more desirable to set up the projector in a hall and show indoors. When it is necessary to exhibit outside the usual method is to erect a large screen in the open and mount the projector in the rear of the truck.

WHITES IN OIL FIELDS.

The White Co., Cleveland, O., has just issued a new booklet, "White Trucks in the Oil Industry," which is replete with striking pictures of trucks at work in the oil fields. What these motor haulers are doing to develop the industry is told in an entertaining way. In the 50 pages are treated every phase of the relation of the truck to the oil industry, from production to distribution.

GOES 13,000 MILES; NO REPAIRS.

Oscar Spear, White River, S. D., is proud of a Transport Model 50 truck, which he has driven 13,000 miles over the worst kind of roads without ever having it laid up for repairs. He has pulled as high as 7000 pounds up hills of 25 per cent. grade. Mr. Spear changes his oil every 300 or 400 miles and takes good care of his truck.

An Acme truck shown on page 502 of this issue hauled 2480 bushels of wheat seven miles in 28 hours, costing \$34.36.

N. A. C. C. COMMITTEE WORK- ING SUCCESSFULLY TO ESTABLISH RURAL EXPRESS

The Rural Motor Express Committee, a development of the Motor Truck Committee of the National Automobile Chamber of Commerce, has completed its work in helping the formation of a state-wide movement of rural express lines radiating out of Louisville, Ky., and is now centering its activities on a similar accomplishment around Pittsburgh, Pa.

The Louisville system is known as the Union Transportation Lines and has 12 individual branches or sections in operation.

This committee is giving extensive aid in the development of rural motor express terminals, return loads bureaus, etc., through the medium of chambers of commerce and commercial organizations in the United States and Canada.

The committee has been instrumental in installing and operating directly under its supervision rural motor express exhibits at state fairs, such as Milwaukee, Wis., and Raleigh and Asheville, N. C. These exhibits were placed by members of the N. A. C. C. and were reported highly satisfactory. The exhibits were held under the auspices of the State Department of Farms and Markets in co-operation with the N. A. C. C., thereby eliminating commercialism and accomplishing much good in educating the farmer to the value of motor trucks on the farm.

The committee is working with and enjoying the cooperation of state market officials connected with the State Department of Farms and Markets in about 35 states. This contact gives them a decided advantage not obtainable elsewhere, for with these state market officials and the state colleges of agriculture, which number about the same, the committee gains access to county farm bureaus, through which they are interesting the farmer in the motor truck as a part of his farm equipment. It is very evident that this connection has resulted in the farmer buying motor trucks. At present the exact number cannot be determined, but were it possible to make a survey occasionally, results checked up would be interesting. From a survey conducted by questionnaire some time ago it was found that there were over 6000 motor trucks in the hands of farmers in the State of New York alone, and this figure is steadily increasing.

A map of the State of New York has been prepared showing rural motor express lines which have been organized recently. This is entirely apart from what is known as farmer owned trucks.

The motor truck department is constantly receiving letters from farming communities throughout the country requesting information on the formation of cooperative farm owned trucks.



Healthmobile, with Projecting Movie Screen, Used by the New York State Department of Health in Child Welfare Campaign.

Banding Together of Truck Owners Crying Need of the Day

Manufacturer and Dealer Must Back the Enterprise
—Organizations Now in Field Would Form Founda-
tion on Which Great Structure Might Be Built—
Haulers Should Get in Line

ALL up for a national association of truck owners!

The timid animal will give battle when cornered.

The mild-mannered man will fight when his back is to the wall.

Trucking interests are being crowded to the wall by unfair legislation in the shape of excessive taxes and fees, by unjust blame for wear of highways, by lack of proper recognition from those they would and do serve, by unfair methods among haulers and by absence of business principles and coordination in their operations.

Yes, and by other agencies, within and without.

Is the industry, including the manufacturer, the distributor and the owner, for they are all concerned, to sit supinely by and allow matters to go from bad to worse without taking a stand for the common cause?

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Poor roads, adverse legislation and trucking company failures hit the man who makes the truck, the man who sells it and the man who buys it.

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A massing of forces should be made at once. Legislators in many states are making ready to place fees so high that the cost of operation will be nigh prohibitive. The first returns are from New Jersey and they loom big. State after state is lining up in a drive on trucks, which they claim are wrecking the highways.

On the other hand but slim recognition is being given by these law makers to the utility of the truck or its work as a factor in necessary transportation. Programmes for the kind of roads that will stand up under heavy duty trucks are few.

With production as at present the demands for motor truck haulage is scantier than it has been since motor trucks began to play such a big part in distributing the products of the country. To make matters worse some are carrying freights at less than cost. Some know they are doing this and others do not. The latter do not know what it costs them to operate. They are charging what the other fellow asks and often they are putting their price a little lower to land the business.

A Blow at the Industry.

These factors do not help the industry. Higher license fees mean that fewer trucks will be bought because this is nothing more nor less than an advance in the price of the truck. Failure to start the building of permanent roads strikes at the future of the business and strikes hard.

Low rates for haulage means that many of those now engaged in this work will junk their vehicles or sell for what they can get, transferring their activities to other fields. It means that few will enter a profession where profits are thin or nil.

Trucks now sold will not remain sold in many cases.

This hits the trucker first, the dealer second and the manufacturer afterwards.

But it hits all and with about the same effect.

The best way to avoid facing such a contingency is to back the dealer and the owner right now, which is surely the psychological moment if there ever was one.

Big license fees will not only affect the commercial hauler, but it will make the manufacturer, merchant or other prospect count up the cost and see what can be done in a transportation way over the railways and the waterways.

And, by the way, the railroad service is getting better every day.

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Should the manufacturer be in this thing?

You bet! Up to his neck.

The dealer, hair and hide.

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The hauler knows. He's all ready. He lacks only the equipment, which is leadership.

The Manufacturer's Part.

Is there any call for the manufacturer to spend a lot of money in this work? We see none. Education is what he must provide. Propaganda by the yard. This means an outlay of money—not an alarming amount—and the returns should be manifold.

The dealer's part should be to see that local organizations are formed in every city and town in the country. This need not cost him a penny. Concentrated missionary work is all that is required of him. The various dealers' associations

should get at this thing on the spot. Where there are no associations a few individual dealers can put over the project handily. The only output needed is energy and enthusiasm.

There exists today one hauling association of size, which aims at a country-wide membership. This is the National Association of Commercial Haulers, with headquarters at Los Angeles, Cal., which has 4400 members on the Pacific coast alone. The secretary is C. R. Collins. Its objective is entirely the furtherance of the cause of the commercial hauler. This organization should be continued, but its entire membership is duty bound to join in bulk any national body of truck owners to be formed.

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M. T. A. A. Foundation.

The Motor Truck Association of America, Inc., with headquarters at 144 West 65th street, New York city, with an aggressive, pushing executive in the person of Executive Secretary T. D. Pratt, looms up as the nucleus for a powerful national association, if its ambitions lean that way, as indicated by reports in the early summer.

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At that time it was understood that the Pennsylvania Motor Truck Owners' Protective association, E. D. Fleming, secretary, and the Indianapolis Highway Transport and Terminal association, Tom Snyder, secretary, had joined forces with the Motor Truck Association of New York, the three comprising the Motor Truck Association of America, Inc., which was to become national in its scope.

Here are the truck owners of three big transportation centers already banded together. Surely these mediums offer a flying start in the national stakes. If the Motor Truck Association of America is out to do business on national lines there is no stopping it. We can see nothing but success attending its efforts. Messrs. Pratt, Snyder and Fleming are a trio of live wires who could put over the plan on their own if they heard the call.

The capacity of the Motor Truck association is being made evident at present through its splendid handling of the arrangements for a mammoth motor truck show in the 12th Regiment Armory, New York city, Jan. 3-8, for which the avail-

able display space has long since been contracted for.

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Here's a Likely Organization.

The National Team and Motor Truck Owners' association, with headquarters at 92 Fort street, West, Detroit, Mich., of which Frank J. Abel, Buffalo, N. Y., is president, and F. L. Menk of Detroit, secretary, seems to be the most pretentious organization in this field today.

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This body reports large memberships in Detroit, New York city, Chicago, Cincinnati, Buffalo and other cities. It is to have a convention in Detroit the latter part of June. So far as known it has not invaded the extreme East, New England, or the extreme West, California. Without these sections no institution can be distinctly national.

No doubt this organization means business. Its aims are worth while. Perhaps it can handle this problem alone, which we fondly hope. The Motor Truck Association of America is already established at three vital points, New York, Philadelphia and Indianapolis. The National Haulers' association is strong on the coast. A merger of the three, with the haulers still holding their own identity, offers wonderful possibilities.

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Must Make Flying Start.

The project of forming a national body would call for an extensive and intensive campaign which would require an immediate start in order to have a fling against the scores of bills aimed at the industry which are to appear before the various legislatures in the spring.

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Sturdy help would be forthcoming on all sides. The New Jersey Motor Truck club, the Massachusetts Motor Truck club and powerful truck organizations in Illinois and other states are already enlisted for service along the same lines and would hardly hesitate to get behind an organization which could present a united front in the legislative halls and win for the truck its belongings. There are scattering organizations of truck owners and haulers in various cities.

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Enough truck owners are organized independently today to form a mighty force if they would stand side by side. Divided, much of their energy is exhaust.

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It is high time the business of motor truck transportation should be standardized and merged into a solid structure, with government backing, like the railway and waterway lines. The only way this business can be established on a firm foundation is by uniting all its subsidiaries and clamoring in a united voice for its own. A national organization is the one and only answer.

Educating the Public.

A factor that must be considered is public confidence. The people must be made to know what the truck means to national progress and prosperity. If all motor trucks were stalled for a week what would happen in this country? Make every citizen know the truck's

utility. Show him that good roads are for his benefit and not speedways for the joy rider. Let him know that he pays the excessive taxes and the high license fees at so much a mouthful.

This seed cannot be sown spasmodically. It must be handed out in big doses and over a wide area. Every man in the industry must be a preacher of this gospel. The magazines and the press must be enlisted. The propaganda must flow freely and it must be instructive and constructive teaching, with the germ of truth oozing from its every line.

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It's far from a single-handed job. It's a big role and only a solid country wide body can play it.

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A Voice at Washington.

Not only before city councils and state legislatures would the voice of a national organization be heard, but its standing would give it hearing at Washington.

What a rumpus it could raise in banking circles! Demands or credit would get consideration never before accorded them. The banker who frowns down the individual would hesitate to offend a unit of a powerful organization with ramifications extending from coast to coast. The improvement it could create in the credit market alone makes it necessary to the industry.

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There is a well founded belief that the average law maker has no desire to crush the truck manufacturer, dealer or owner. His policy of repression is founded on ignorance. He is willing to be shown. Let's show him.

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While we are doing it why not take the burden from the few who are now carrying it and put it on the shoulders of the many where it belongs. The work of fighting adverse legislation is now being carried on here and there by individuals who pay the cost while others sit idly by and reap the benefits. Organization would mean that this expense would be equally borne, as it should be.

Fighting Bad Legislation.

The war against the wild and woolly bills which wild-eyed legislators are aiming at the motor truck is now being waged indiscriminately, without head nor tail, rhyme nor reason. A bad bill that is killed on its merits in one state goes on the statute books in another, simply because there is none to disclose its injustice. The experience of those who make the fight in one state is not used as a weapon in another. Organization would weld together all the fighting forces and each state would get the backing and be girded by the wisdom of every other commonwealth the country over. As a means of battling unjust and discriminatory legislation a national organization is an essential.

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To the commercial hauler a nation wide getting together would be a life saver. At this stage the trucker needs a life line.

The writer feels that the haulers should have their own organization, but every member should be a member and an active one in the broader institution. The manufacturer, dealer and private owner can do much to put the truck man on his feet. At the same time this trio needs the hauler. What is good for one is good for all.

The Hauler's Problems.

The truck man has many problems of his own, but few in which his brother of the manufacturing and selling field cannot help him. While the question of bringing up rates, conditions being equal, and establishing them on a sane basis is up to the hauler himself, it is important to the manufacturer, the merchant or other owner or prospective owner of trucks, because it has a bearing on whether he will do his own trucking or hire it. Also whether he will employ motor trucks for this service. From this standpoint it is of absorbing interest to the manufacturer and dealer.

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The right answer means a market for more trucks.

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Good roads, registration fees, taxes and insurance are all problems which affect the manufacturer, the dealer and the owner.

A Legion of Benefits.

A solidification of interests which will put an end to overloading and over-speeding means a lot to the maker of the truckers and the seller. The owner may think this will harm him, but he'll be a big gainer in the long run.

Cooperative building of terminals, the divining of truck costs and an organized solving of the return loads problem are outcomes that should result from a national body. All these improvements in the situation will help to turn idle trucks into busy trucks and bring efficiency into the business of transportation, where efficiency should be found.

The power hauling business of today is not built on comprehensive lines. It should be operated upon and then put through a recuperating process. A national organization with a corps of specialists can do this job to the queen's taste.

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Now for action.

FOUR HORSES COST TWICE EXPENSE OF 2½-TON TRUCK.

The Smith-Phillips Lumber Co., Winston-Salem, N. C., has had a motor truck and horses on the job this year and has had a chance to compare the expense of the two, which the company did. Figures were kept over a period of 3½ months in the present year and they show that during that time four one-horse rigs costs \$409.09, against \$183.42 for a Transport 2½-ton truck. The latter item included gas, oil and repairs and also license fees of \$26. While the horses cost \$225.67 more they delivered less material than the truck the actual figures show.

BYRON TRAILERS AND SEMI-TRAILERS



Types of Trailer and Semi-Trailer Now Being Produced for the Trade by the Byron Engineering Works, Louisville, Ky., Under Patents Granted to O. E. Byron.

HEAVERY duty trailers and semi-trailers are now being built commercially by the Byron Engineering Works, Louisville, Ky., an enterprise organized for producing units under patents granted to O. E. Byron. This company is well established, has a fully equipped plant with sufficient capacity to meet the present requirements, and it is so located that in the event of need the factory can be considerably increased.

The officers of the company are Graeme McGowan, president; O. E. Byron, vice president, and Walter McGowan, secretary-treasurer. Mr. Byron is well known in the industry, having been associated with a number of well known concerns during the past 10 years, and the Messrs. McGowan have been identified with a number of business successes in Louisville.

The plant of the company is 80 by 200 feet, and its facilities have a capacity of about 1000 units a year. The site is sufficient size so that the factory can be substantially increased should this be necessary. Having the plant and production equipment the company is now developing a sales organization and it has already made contract with distributors in a number of the important commercial centers of the country.

Three Series of Trailer Units.

The series for which designs have been determined include a four-wheel reversible type, two-wheel pole trailers and semi-trailers. The first of these is now built in three and five tons capacities, the second in 2½ and four tons capacities, and the last in three and six tons capacities, or six different vehicles. These series will be increased later on the addition of several sizes to each.

Certainty of control is claimed for Byron units, all of which are equipped with a steering mechanism designed by Mr. Byron, which is controlled by patents. Statement is made that exclusive qualities are obtained by the Byron patents. With reference to application of these patents: A ball and socket joint insures that the steering gear shall be in perfect alignment regardless of the position of the trailer frame during contact of the wheels with road obstructions, or when the body is rocked from side to side.

Steering Arm Is Protected.

The steering arm is protected by heavy helical springs that are enclosed, which

absorb stresses from road shock. The swinging steering arm is linked to the tie rod between levers of the steering knuckles, and as it swings parallel to the action of the springs it maintains the steering gear alignment no matter what the variance in the springs from deflection or reflexion. An independent steering arm connects the steering gear to the drawhead or frame as required, and with this the trailer may be steered by hand independent of the drawbar either moving forward or backward.

This obviates the necessity for uncoupling the trailer from the tractor while manoeuvring, and it economizes time as well as insuring against injury. The drawhead coupling is another unique Byron design, which locks the drawbar automatically, so that the trailer cannot be dropped while towing. As will be noted, the drawbars swing in guides in the end members, and the movement of the wheels is such that the trailer will track exactly as the tractor. This is a quality that insures against "snaking" and side-sway.

Claim is made that all Byron units are built to the best engineering practise. The frames are constructed of extra heavy rolled channel section steel, with four cross members that are strongly gusseted, and the ends are formed with horizontal guides for the steering arms. The corner brackets are designed to carry the pivoted ends of the springs, and the inner ends are shackled. The springs are semi-elliptic and are mounted on heavy rectangular steel drop forged axles, with steering arms and wheel spindles of chrome vanadium steel. The wheels are wood, artillery

type, and these are mounted on Timken roller bearings. The tires are solid rubber pressed on bands of sizes to meet the load rating requirements.

What has been stated applies to the four-wheel reversible types. The semi-trailers are built with frames that do not include the steering mechanism, the frames being carried on dead axles and one set of semi-elliptic springs, and these springs are pivoted forward and shackled at the rear. The forward ends of the units are mounted on fifth wheels, the lower sections being located on the chassis frame of the tractors, and the upper sections on the semi-trailer frames. The pole trailers are similarly constructed, with a short frame on which is a frame and bolster, the pole being carried to the tractor or made fast to the load. With these the full fifth wheel is installed on the tractor.

The Byron Engineering Works is in receipt of many communications commending these products from the standpoint of utility, efficiency and economy.



A Byron Trailer, Showing the Mechanism Which Makes for High Efficiency.

Will Vote Soon

It is doubtful if there is a truck chassis active today that can boast the mileage or the years of service of the Mack 2½-tonner shown in the accompanying illustration. This motor 'bus has been busy day in and day out for 19 years and has traveled 324,000 miles. It is still running continuously.

The 'bus is owned and operated by Higgins Tours of Chicago and New Orleans, which has four other Mack 2½-tonners under similar 'buses. This remarkable quartette has also seen from 14 to 18 years of service.

In winter they are operated in New Orleans as sightseers for tourists and in summer they are transferred to Chicago, where they are used in general passenger transportation.

L. G. Higgins, proprietor of the company, says: "They have given excellent service during all the time I have used them and in no instance have they ever missed a single trip."

RECEIVER FOR REYNOLDS.

The Reynolds Motor Truck Co., Mt. Clemens, Mich., is in the hands of a receiver and production has been suspended. The court acted on an application of the stockholders. C. J. Reimold, the receiver, states that the assets exceeds the liabilities and the stockholders will be protected. He will assemble as many trucks as possible from the inventory on hand and try to dispose of them before resuming full operations.

This company was organized last October, residents of Mt. Clemens providing the \$200,000 capital. The plant has been producing five trucks a month since spring in a rented building.

BOSTON SANFORD DISTRIBUTOR.

The C. E. Fay-Allen Co., one of the best known automobile houses in Boston, Mass., has taken over the distribution of the Sanford truck in that territory. This concern already handles the Maxwell and is now enabled to meet the requirements for both light and heavy duty deliveries.

MOTOR TRANSPORT POST OF AMERICAN LEGION IN NEW YORK CITY

Motor Transport Post, No. 815, American Legion, has been formed with headquarters at room 503, 1780 Broadway, New York city, and will be a distinct asset to the automotive industry, as well as to the service mens' organization. It will be closely identified with all plans or projects pertaining to peace-time preparation for efficient service in emergency.

It is also intended that the Post shall be in constant touch with the manufacturers of automotive products with a view to acting as an agency or clearing house for commercial ideas of value to the War Department and conversely of War Department experience, which may prove of value to the industry at large. As an illustration of this co-operation—all the best models of the German motor trucks were collected and brought back to this country and are now in the custody of the Bureau of Standards in Washington, available for examination by the automotive industry.

It is planned to invite officers of the regular army and experts in various lines connected with the automotive industry to speak at meetings of the post on topics of general interest to members, such as the reorganization of the army and the place of the Motor Transport Service in this reorganization. A great many men who were engaged in the Motor Transport Service of the army are associating themselves with the automobile industry as the result of their war affiliations and among the objects of the post activities will be the development of opportunities for former motor transport men to identify themselves with this industry.

TO MAKE TRUCKS AND PARTS.

The A. C. Motor Truck Co. has been incorporated with \$50,000 capital to manufacture trucks and parts at Rochelle Park, N. J. The incorporators are C. S. Bentley, William J. Aitken and H. C. Chambers.

A Joy Driver

An equipment which many truck drivers lack and which is often highly important is a pleasant disposition.

The commercial hauler who has a staff of drivers who are human beings and show some consideration for those to whom they render service is blessed. The right kind of truck driver is a business getter and also a holder of business. A driver can easily give offense and drive a customer off his employer's books. While it is admitted that the chief requisite of a driver is ability to operate and look after his machine, the quality of being courteous and gentlemanly ranks well up among the essentials in the perfect pilot. With competition keen the right kind of a driver can do much toward maintaining the haul's trade and bringing in new patrons.

The writer ran across a case in a New England city the other day where a trucking company does all the hauling for a small manufacturing concern the year around. One truck is almost constantly employed in this service. The transportation man at the factory is considerable of a grouch and hard to get along with. Several times the hauler has been within an ace of losing this profitable work because of obstreperous drivers, who refused to recognize the mill man's temperament and were engaged in continual controversies.

The trucking company manager was in touch with the situation and recently he put a genial, mild mannered driver on this job. This step eliminated all friction. Several times the factory transportation official has telephoned the trucker in commendation of this driver and there is no longer any fear that this well paying proposition will be lost.

It costs nothing to be pleasant and cheerful even in the face of gruffness on the other end of the line. The driver who remembers that he is working for his employer and has no right to sacrifice his interests to satisfy his own whims is the fellow who heads the line on bonus day.

PROVIDENCE FIRE DEPARTMENT FULLY MOTORIZED.

The city of Providence, R. I., replaces the last of its horse drawn apparatus with motor drawn equipment this month. The first motor wagon was put in service May 25, 1911. The city now has 27 La France trucks, seven Knox and five Pope-Hartfords. This includes 14 triple combination pieces that will jointly pump 14,000 gallons of water a minute.

PHOTO CONTEST EXTENDED.

To give Acme owners, dealers, and other interested parties more time to submit their pet photographs in the \$50 cash prize contest announced in the September Acme Angles, the Photo Contest Director of the Acme Motor Truck Co., Cadillac, Mich., has extended the time for filing photos until Jan. 15. There are six prizes, the first award being \$25.



Motor 'Bus on Mack 2½-Ton Chassis, Which Has Been on the Job 19 Years for Higgins Tours, Chicago and New Orleans, and Which Has Traveled 324,000 Miles.

"A DREAM AND A REALITY"



The Magnificent Plant of S. F. Bowser & Co., Fort Wayne, Ind., Built on the Site Where S. F. Bowser, the Founder and President, Conceived the Idea Which Has Proven so Potent in Modernizing the Present Oil Storage and Distributing System. A Subsidiary Company Is Located at Toronto, Canada.

Long before daybreak one zero morning in 1885 a man stood shivering beside one of the old-fashioned, deep dug wells. He was anxious to get an early start on that day's bread winning errand, but he was doomed to disappointment.

Strange as it may seem to us in these days when the legend of "The Old Oaken Bucket" is one which takes us back to bygone days, this man—in a hurry, with ungloved hands—trying to raise the bucket which was fastened to the lower end of an ice covered rope, presented an entirely different scene.

It was here that the idea back of the modern oil storage and distributing systems was born. After working for considerable time the rope was finally limbered sufficiently to run through the pulley above, and the coveted water brought to the surface. But this not until the hero of our story had resolved to initiate a device which would eliminate the necessity for experiences of that kind.

That the idea here born should be developed into the modern oil measuring and handling equipment may seem rather queer; however, S. F. Bowser, the founder and president of S. F. Bowser & Co.—the hero of this story—foresaw in the future a greater service to humanity by confining the manufactured product to the handling of oil and similar liquids.

The courage of this man and his associates, the men who have cast their lot

with the pioneer of the oil storage and distribution idea now so popular, has been unflinching. Otherwise it would never have developed to its present proportions from its humble beginning in the loft of a small cow barn. In that loft the first piston type, force feed, measuring pump was built and presented to the commercial world.

From that beginning the business has grown until it assumes the position of an internationally known product. One illustration shows the plant as it is today, covering many acres of ground in Fort Wayne, on the site of the old cow barn. In addition to the Fort Wayne plant there is a subsidiary company, S. F. Bowser Co., Ltd., of Toronto, Canada. The other illustration shows one of the latest products of this concern.

The firm foundation upon which the business was built is due to Mr. Bowser's conception of fair and honorable business dealings; his manufacture of an honest product of quality, truthfully represented, and the conduct of the business in a prompt and efficient manner.

LOGGERS TO MOTORIZED.

The Southern Logging association devoted most of a three-day session at New Orleans, La., late in October to discussing the replacement of mules and oxen in the lumber industry by trucks and tractors. This business will be entirely motorized within three years.



One of the Latest Products of S. F. Bowser & Co., Which Is Rapidly Becoming a Familiar Sight in the Cities and Large Towns of the United States.

WHO'S WHO ON THE SALES FIRING LINE

GOODYEAR EXECUTIVES OUT.

During the present business slump a number of the high salaried officials of the Goodyear Tire & Rubber Co., Akron, O., have retired. Several of them are to join the staff of the American Dunlop Co., Buffalo, N. Y. Those who have resigned include C. L. Landon, assistant sales manager; D. M. Caldwell, assistant manager of the truck tire department; C. P. Stearns of the fleet sales department; R. J. West, head of the office employment department, and William Blake, his assistant; T. R. Converse, assistant advertising manager, and Robert Shively of the advertising department.

RAINIER GETS CHRYSLER.

The Rainier Motor Corporation, New York city, manufacturer of worm drive trucks, has engaged Guy R. Chrysler, formerly vice president and sales manager of the Gramm-Bernstein Sales Corporation, as retail sales manager. He is one of New York's pioneer truck salesmen and his rich experience should make him a valuable adjunct to the Rainier organization.

ACME DISTRIBUTOR GROWS.

The S. and F. Motor Sales Co., Brockton, Mass., Plymouth county distributor for the Acme truck, is enlarging its quarters in order to cope with the call for these trucks in its territory. The show room at 39-41 Pleasant street will be completely renovated. Changes will also be made in the service station so that Acme owners may have the best possible service.

NEW SANFORD AGENCIES.

The Sanford Motor Truck Co., Syracuse, N. Y., has made the following new agency connections: E. White, Valdesta, Ga.; Railroad Avenue Auto & Repair Shop, Morgan City, La.; Bennis & Visscher, 277 Dock street, Schenectady, N. Y.; Fay-Allen Co., 73 Commonwealth avenue, Boston, Mass.

NEW WHITE DISTRIBUTOR.

The Capitol City Auto Co. has been formed at Hartford, Conn., and will distribute the White truck in the northern section of the state. The officers are: President, A. C. Sommers; treasurer, James A. Dahill, and secretary, Benedict M. Holden.

KALAMAZOO FOREIGN TRADE.

The Kalamazoo Motors Corporation, Kalamazoo, Mich., manufacturer of Kalamazoo trucks, has opened an export department at 52 Wall street, New York city, with James Zobian in charge of foreign distribution.

O. M. Vett Says

"When in doubt, do it, particularly if it only costs a two cent stamp," says O. M. Vett, veteran vendor of motor trucks.

"I speak from the book of experience, than which there is but one greater publication, and that had divine guidance."

The pioneer then proceeded to draw therefrom the incident from which he took his text.

"We were making up a list of prospects for sales letters a year back," he confided, "and had apparently reached the end of the string."

"There's the Pewee Coal Co.' said one salesman."

"Never mind them," replied the sales manager, "they've got two Spanko trucks and they probably are sold on the top-price type!"

"It'll only cost a stamp," I chimed in."

"They got our letter."

"It seemed that they needed three more trucks, but could not see their way clear to buying more than two. Our letter appeared just in time to provide the climax. It struck this firm that they could get three of our trucks at the price they would pay for two of the brand they were using. They had heard good reports of our machine. It was just a question of getting together."

"They paved our path with roses by inviting a salesman to call. That was all there was to it. They were hooked. Our trucks stood the test. They now have six of our makes and no Spankos."

"An after thought and a two-cent stamp comprised the equipment that brought this business. When in doubt go ahead. Never reverse."

"TRUCK ROW" IN WORCESTER.

Shrewsbury street is rapidly becoming the motor truck row of Worcester, Mass., stealing the honors from Main street, which has hitherto housed most of the truck and auto distributing headquarters in that city. The White Co. is the latest to remove its sales and service station to Shrewsbury street, where the Republic, Federal and Packard companies are already located.

HEDGES JOINS TABER, INC.

Russell P. Taber, Inc., Reo and Peerless distributor in the Hartford, Conn., territory, has added H. E. Hedges to its sales force. He has been identified with the Buick interests in that district for a number of years.

DISTRIBUTING OLDSMOBILES.

The Fishman Motor Co., Harrisburg, Pa., Charles W. Detrey, manager, has taken over the distribution of Oldsmobile trucks in that territory.

NEW TRAFFIC DISTRIBUTORS.

Traffic Motor Truck Corporation, St. Louis, Mo., has appointed the following new distributors: Hence Motor Truck Co., Wilmington, Del., in that territory; McKeag Motor Co., Trenton, N. J., county distributor, and the Harrisburg Welding & Brazing Co., Harrisburg, Pa., distributor for Dauphin, Juniata and Cumberland counties.

WHITE AGENT IN AFRICA.

A. Conro Fiero of the foreign department of the White Co., Cleveland, O., sailed Nov. 15 for West and South Africa to make a survey of the motor truck market. Mr. Fiero was formerly European sales manager for the Buda Co., Chicago.

REUSCHAW WITH REO AGAIN.

R. C. Reuschaw, who recently resigned as vice president of Mitchell Motors, and who was reported to have accepted another position, has returned to his old post as general sales manager of the Reo organization.

THE NASH IN NASHVILLE.

The South Nash Motor Co. has taken over that line, including the Nash one and two-ton truck, in and about Nashville, Tenn. Thomas Norton, formerly with the Maxwell-Chalmers people, will be in charge of truck sales.

MOONEY REMY MANAGER.

General Motors Corporation has named J. D. Mooney, formerly assistant to Vice President A. P. Sloan, Jr., as general manager of the Remy Electric Division, with headquarters at Anderson, Ind.

TO MANAGE DENBY SALES.

Woodbridge Co., Inc., Boston, New England distributor of Denby trucks, has appointed George G. Reed as general sales manager. He is said to have sold the first gasoline trucks in that district.

MCDADDE KEYSTONE AD MAN.

The Keystone Oil & Manufacturing Co., Chicago, has named Clint McDade, formerly of the Jenkins Vulcan Spring Co., and the Elgin Motor Car Corporation, as advertising manager.

HERBERT HEADS DENBY BRANCH.

The Denby Motor Truck Co., Detroit, has placed W. H. Herbert in charge of its Detroit branch. L. B. Miles, factory service director, will also direct the service feature of this branch.

MOVIES BRING FACTORY TO DEALER

The 1500 organizations of distributors, dealers, sub-dealers and service stations, which make up the distribution and maintenance departments of the Service Motor Truck Co., Wabash, Ind., are to be brought through the factory and into intimate touch with the executives through a remarkable series of moving pictures now being filmed. Scenes on the 42 acres of ground and the nine acres of floor space employed by the company in its operations, together with views of the new construction now under way, will be shown.

The film that has just been produced by the Rothacker Film Co. of Chicago, was constructed to introduce the factory officials to dealer organizations, and show them Service trucks and how they are manufactured. It also goes into the various problems of distribution, territorial development and advertising, which would be of interest to the dealer. By means of De Vry suit case projection machines the picture will be taken around to the dealers and shown to them in their own offices.

The film commences at the garage of a live wire dealer in the middle west, who sees one of the company's advertisements in the Saturday Evening Post and determines to visit the Service factories, with the idea of obtaining a selling franchise.

Executives as Movie Stars.

The film then pictures the administration building and the arrival of the dealer, Arthur Stevens, which part is played in the film by the company's staff photographer, A. B. Carpenter.

After arriving, Stevens is introduced

to the sales manager, Mr. Herbig, who explains to him the company's policy so far as organization is concerned; shows him how territory should be developed to obtain the maximum results and make the most money, and shows him the various models of trucks that are made by the Service company.

The dealer is then shown through the offices, where he is introduced to various officials. Introduced in the film are all of the officials who have any considerable volume of correspondence with the dealer organization, because it is felt that where the dealer has the opportunity of seeing what the man looks like whose letters he receives, there would be a more intimate and personal touch in the correspondence than would otherwise be the case.

In the course of the trip through the office, Stevens meets Charles Guernsey, chief engineer, who explains to him the Service method of scientific cushioning, how there are five fundamental shocks and strains to which all motor trucks are subjected, but which are neutralized by the various means of cushioning which have been incorporated into the design and construction of Service trucks.

Scientific Cushioning.

After explaining scientific cushioning, which in the film is illustrated by animated cartoons, Mr. Guernsey shows him through the factory, where the entire manufacturing processes are shown in detail, from the time the materials are received at the shipping dock, through the entire process of manufacture, with inspections at each step, until the truck

is finally painted and ready to be delivered. Included are the stock rooms of the parts department and the fleet of 11 airplanes, by which emergency orders for repair parts are delivered when necessary. The experimental department is also shown, where all parts and units are tested, experimental parts built, truck engines tested by dynamometer, etc.

The Side of the Employees.

After leaving the factory Stevens is introduced to Mole Cook, secretary and general manager, who takes him to lunch at the factory dining room, where he explains to him the various activities of the personnel department making for ideal working conditions. Here are exhibited the employment department, how records are kept on each individual, insurance policies that are taken out on the life of every Service worker, the premiums on which are paid by the factory, first aid room, nurses, factory dentist, baseball team, factory band, recreation rooms, dance hall, etc.

After lunch Stevens meets Rolfe C. Spinning, advertising manager, who explains to him the advertising campaign that is now being conducted in such papers as the Saturday Evening Post, Literary Digest, Leslie's Weekly, System and various trade papers. He is also shown the literature that the factory prepares, and is told of the cooperation he will receive in his local sales effort.

He is then introduced to R. J. Assens, assistant treasurer, who talks to him concerning finance, and then again sees Mr. Herbig and signs the contract covering his territory.

MOTOR TRUCK BELT LINE RUSHES FACTORY PRODUCTION.

In the belief that the superior service, including the reduction of delivery time from four days to three hours, the elimination of breakage, etc., more than offsets a slightly increased cost, the Luger Furniture Co., which has factories at Minneapolis and North St. Paul, 22 miles apart, has established a belt line between the two points through the acquisition of two 2½-ton Selden trucks. The results have more than justified the outlay.

The trucks bring raw material when needed quickly and thus have kept the factories from shutting down on several occasions. The service has linked the manufacturing processes and increased the production of the organization. On an average 50-mile day the records of the Luger Furniture Co. show the cost of a truck to be \$16.70, including all items. Some days the results are much better. For instance, one where two 31-mile trips were made with a total of five tons carried. This resulted in \$18.90 cost per day, \$3.76 per ton and 24 cents per ton-mile.



One of Selden 2½-Ton Trucks Which Gives Superior Service on Belt Line for Minneapolis Furniture Factory.

SIDELIGHTS OF HIGHWAY HAULAGE

FIGURES SHOW GOOD ROADS AND TRUCKS ENHANCE PROPERTY VALUE

Motor trucks and improved highways are the biggest forces today in jumping land values, a survey by the Firestone Ship-by-Truck Bureau, Akron, O., indicates.

Officials of one southern community—Hinds county, Mississippi—in campaigning for a \$1,000,000 highway bond issue, claim that motor trucks, operating on good roads, have raised land values from \$25 an acre five years ago to \$100 and \$125 an acre at present valuation.

County supervisors, submitting the issue to a vote of the people, attribute their decision to ask for this sum "to the great agricultural, commercial and educational development of the country due to the use of the motor truck, tractors and passenger cars."

Investigation has developed, according to the bureau report, that the farther away from town on improved roads that real estate lies, the greater the percentage of increase in value with the advent of good roads. Within five miles of an eastern city where recent improvements in highways were made, the appreciation in value within five years was only 68.3. But 10 miles out the percentage of increase was 96.7, and 25 miles away the ratio of increase was 194.9. It is held that the motor truck is equally responsible with the highways for this improvement.

Farms contiguous to fairly good roads have been known to advance in value within two or three years after the construction of hard surface highways as much as 114 per cent., while the lowest increase reported was found to be 9.1 per cent.

DRIVER DUFRESNE KILLED.

MOTOR TRUCK readers who were interested in the operations of Dufresne Bros., Worcester, Mass., truckers, as outlined in last month's issue, will learn with regret that one of the five brothers, Joseph, was killed on Oct. 27 when the five-ton White he was driving went through the Indian Orchard-Ludlow bridge and plunged 40 feet into the Chicopee river, near Springfield, Mass. The boy was pinned beneath the truck, which overturned in about five feet of water. His brother, Eugene, also went into the river, but was able to clear himself from the truck in its fall and escaped injury. The truck was carrying a load of oxygen tanks from Worcester to Springfield, which run it had been making daily with the same load under a long term contract.

Announcement has been made that the price of the Maxwell 1½-ton truck has been reduced from \$1637 to \$1497.

ELECTRIC TRUCKS ON DISPLAY.

Electric motor trucks were shown at the New York Electrical Exposition, Grand Central Palace, New York city, Oct 6-16 by the Commercial Truck Co. of America, the Oneida Motor Truck Co., the Steinmetz Electric Motor Car Corporation, the Walker Vehicle Co. and the Ward Motor Vehicle Co. Industrial trucks and tractors will be exhibited by the Baker R. & L. Co., the Lakewood Engineering Co., the Lansing Co. and the Steinmetz concern. The last named is a newcomer in the electric vehicle field. Demonstrations were given by the industrial vehicles.

PIERCE-ARROW TRUCK SHOW.

The Foss-Hughes Co., distributing Pierce-Arrow trucks in Philadelphia and surrounding territory, recently staged a truck show of its own, to which personal invitations were issued. It was held in the salesrooms. The new models, which had been driven under their own power from the Buffalo factory, were on display. There was a large attendance and many new prospects were secured. A novel feature was the installation in a commanding position on one of the walls of a scene in colors showing what the various trucks can do on the road.

STEINMETZ CORP. TO BUILD TIOGA TRACTORS AT ITS BALTIMORE PLANT

The Steinmetz Electric Motor Car Corporation, Baltimore, Md., has purchased the tractor division of the Taylor-Wharton Iron & Steel Co., known as the Tioga Manufacturing Co., Philadelphia, owner of all Tioga tractor patents. Dr. Charles P. Steinmetz, chief consulting engineer of the General Electric Co., Schenectady, N. Y., formed the Steinmetz Co., which was recently organized to produce electric trucks under the patents of Dr. Steinmetz.

Tioga tractors will be built hereafter at the just completed Baltimore plant of the Steinmetz company. The production for the first year is planned on a scale of 20 tractors per week. The transmissions and rear axles, of special Tioga design, and under Tioga patents, will continue to be built in Fond du Lac, Wis., by the Fond du Lac Machine Co., a subsidiary of the Gidding & Lewis Tool Machine Co., manufacturers of the Gidding & Lewis horizontal boring mills.

A. M. Leoni, the designer of Tioga tractors, is going to Baltimore with the Steinmetz company to be at the head of engineering and of production, and H. F. Gleason, present general manager of the Taylor-Wharton tractor division, will become associated with the Steinmetz company in an advisory capacity.

BEGIN WORK ON \$28,000,000 VEHICLE TUNNEL UNDER HUDSON RIVER

Two United States senators, a governor, a lieutenant-governor, several mayors and other dignitaries assisted Oct. 12 at the formal breaking of ground for a vehicular tunnel beneath the Hudson river, which will be the biggest sub-aqueous structure in the world. The estimated cost is \$28,000,000.

The tunnel, with all facilities of a city thoroughfare, will link closely the greatest steamship terminals in America, along the New York side of the Hudson, with the immense railroad concentration centers in Jersey City. It is expected to quicken greatly the movement of the nation's incoming and outgoing freight, and to reduce food costs for New York's millions.

Its strategic value in war time, when it could be available for troop movements and transportation of mail across the nation's neck unimpaired, was emphasized by Senator Calder. He regretted Congress had refused Federal aid in constructing the big tube, and declared the states of New York and New Jersey must obtain government help to make the world's greatest port what it should be.

The speakers congratulated the citizens of both states for their unanimity in desiring the tunnel and willingness to pay for it alone. They predicted it would be followed by other similar undertakings, eventually doing away with the ferries, used for 200 years, but always subject to the vicissitudes of the weather and dangers of storms.

GOODRICH TRUCK BOOK OUT.

The B. F. Goodrich Rubber Co. has the eighth volume of "Motor Trucks of America" off the press and its branches are now distributing the book to fleet owners and prospective truck buyers. Information is included regarding weight distribution, axle and transmission ratios, bearings, etc., and as an increasing number of manufacturers are prepared to furnish either solid or pneumatic tire equipment, such options are covered as fully as possible. Specifications and photographs given in the hand book were furnished and approved by the various truck manufacturers and were accordingly correct when the volume went to press.

NEW MACK PAMPHLET.

International Motor Co., New York city, manufacturer of Mack trucks, is distributing an interesting pamphlet containing A. T. Goldbeck's paper on Impact Tests on Highway Surfaces, which every highway engineer and contractor should have. It is illustrated.

THE COMMERCE MERCANTILE EXPRESS

PRODUCTION of the new model Commerce truck specified as the Mercantile Express, with load rating of 1500-2500 pounds, is progressing rapidly at the factory of the Commerce Motor Car Co., Detroit, and this size will be produced in large numbers to meet the demands from agencies in all parts of the country. Claim is made by the company that this machine has many qualities to recommend it and, having maximum speed of 40 miles an hour, it can be utilized for any work where time is the important factor and the loads are comparatively small.

The chassis has wheelbase of 127 inches and the loading space is 110 inches, and it can be turned in a radius of 26 feet. It is unusually equipped and is electrically lighted and started. The chassis is sold for \$1350 and open or closed cabs are supplied when specified as extras.

The design includes the units that have been used in Commerce trucks for a considerable period and are recognized throughout the industry and trade as standard. The object of the engineers has been to obtain a construction that could be driven fast and yet have long service life, and such simplification and accessibility that maintenance and upkeep will be minimum and adjustment and restoration can be quickly made when necessary.

Constructed from Standard Units.

The design may be regarded as a perfection of those that preceded it and the details of assembly have been developed with unusual care. The construction units include Continental Red Seal engines, Detroit gear clutch and transmission gearsets, Spicer tubular shaft and universal joints, Salisbury rear axles, Detroit springs, Jacox steering gears, Eise-mann magnetos, Zenith carburetors, Stewart vacuum fuel supplies, Bijur lighting and starting systems, Willard storage batteries and Goodyear cord tires.

The engine is a four-cylinder, water-cooled, L head type, with cylinder bore of $3\frac{1}{4}$ inches and stroke of five inches, that is rated at 22.50 horsepower by the S. A. E. formula, and which will develop considerably in excess of this rating. The cylinders are cast en bloc with the water jacket integral and the head is a separate casting with the outlet manifold integral and centered, so that there is a flow of water over the heads of the combustion chambers. The water jacket is unusually large and the chambers are formed so that there will be unrestricted flow of water.

Details of Engine Design.

The crank case is cast in two sections, the upper with extensions that house the timing gearset and the flywheel, and the lower section is the base of the crank chamber and the oil reservoir. The bottom of the crank case can be removed for examination of or work on the crankshaft or crankpin bearings without removal of the engine from the chassis

frame or further dismantling. The fuel is drawn through a cored passage in the cylinder block and is preheated before being admitted to the cylinders. The crankshaft is a three-journal type with large bearings. The valves are at the right side and these are fully enclosed and protected. The generator and magneto are mounted tandem at the right side and driven by an outside shaft from the timing gearset by flexible couplings.

The engine is lubricated by a pressure system, the oil being drawn from the reservoir and forced by a pump through a manifold and drilled crankshaft to the main, crank pin and camshaft bearings and timing gearset, while the throw-off from the crankshaft and distribution by splash supplies the cylinders, pistons, wristpins, cams and valve tappets. The engine is cooled by a thermo-syphon circulation of water in the cylinder jacket and a built-up type of radiator, with cast top and bottom tanks and a cellular cooling section that can be removed when necessary for cleaning or repair. The radiator tanks are finned. Radiation is promoted by a fan driven by a belt from a pulley on the crankshaft extension. The engine is suspended at three points—on a trunnion carried on a forward frame member and on arms cast integral with the flywheel bell housing.

Power Transmission System.

The clutch is a cone type, 14 inches diameter, that is maintained to be very efficient. The transmission gearset is a sliding gear selective type having three forward speed ratios and reverse, with large shafts mounted on annular ball bearings and gears with wide faces. The gearset and the clutch are assembled with the engine as a unit power plant and this is mounted at three points, on a trunnion carried by a frame cross member and on arms cast integral with the upper section of the flywheel housing.

The drive is by a single tubular shaft with a universal joint at either end to the pinion shaft of the Salisbury three-quarter floating rear axle. The axle housing consists of a cast steel central section with the tubes pressed on to this and riveted. The driving pinion and master gear are helical cut and the differential gearset is a bevel gear type

that is mounted on large taper bearings. The pinion shaft is carried by a roller bearing and an annular ball bearing takes the thrust. The driving shafts are heat treated chrome nickel steel that are taper and are mounted on double row annular ball bearings. These bearings take the thrust in either direction. The shafts may be withdrawn without removing the wheels from the axle. The housing is made very rigid by a truss rod securely anchored to heavy lugs. The front axle is an I section steel drop forging that is heat treated with heavy steering knuckles.

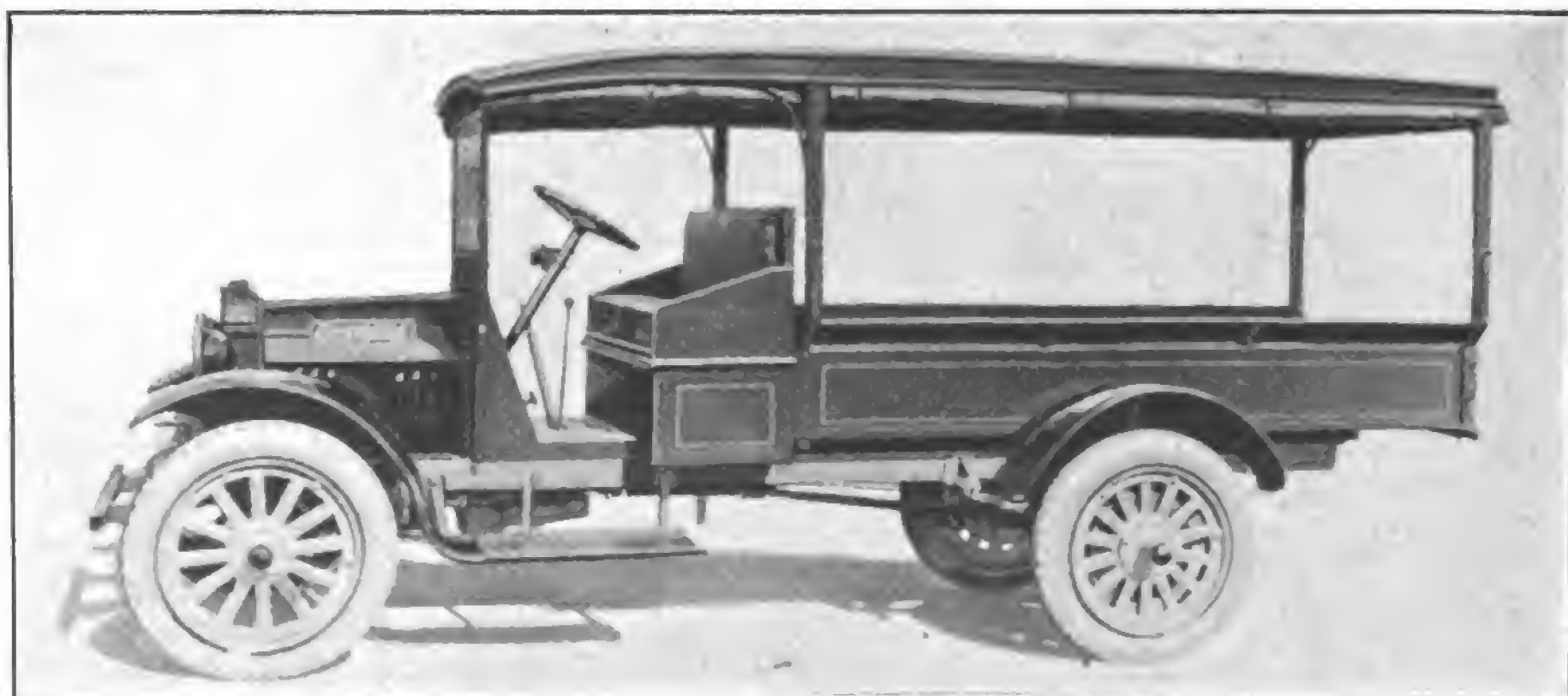
Frame and Running Gear.

The frame is constructed of pressed steel channel section $4\frac{1}{2}$ inches deep, with wide webs, and it has four cross members, strongly reinforced and gusseted. This is suspended on semi-elliptic springs, the forward set having eight leaves, 36 inches long and $2\frac{1}{4}$ inches wide, and the rear set 10 leaves 50 inches long and three inches wide. All spring eyes are bronze bushed and the bolts are hardened and ground and are fitted with oil cups. The wheels are wood, artillery type, with spokes $1\frac{3}{4}$ inches square, the forward set with 12 spokes and the rear set with 14 spokes. The front wheels are mounted on roller bearings. The wheels are shod with 34 by $4\frac{1}{2}$ -inch pneumatic cord tires, on demountable rims.

The steering column is mounted at the left side and it is a worm and nut type with means of adjustment to compensate wear. The hand wheel is 18 inches diameter. The control is conventional and the throttle is regulated by hand lever mounted on the steering wheel and by foot accelerator. The service brake shoes are external contracting on drums 16 inches diameter on the rear wheels and the emergency brake shoes are internal expanding within these drums.

The Equipment Very Complete.

The equipment includes a Bijur two-unit electric starting and lighting system, with a Willard six-volt 80 ampere-hour storage battery, with all wiring in armored conduits, the head lamps equipped with dimmers and ammeter and ignition switch on the dash; driver's seat, fenders, dust shields and running boards, sight oil gauge, mechanical horn,



Mercantile Express Now in Production by Commerce Motor Car Co., Detroit, Mich.

pump, jack, tool kit, tire repair kit and spare demountable rim. The windshield is a two-piece ventilating rain vision type. Driver's seat has lazy back and nine-inch upholstery with spring cushions.

The chassis is painted and the finish is harmonious with standard painting of the stock bodies. The chassis can be equipped at the factory with either flare-board express bodies, which are 110 inches long, 44 inches wide and 12 inches deep; convertible stake and platform bodies that are 108 inches long and 68 inches wide, with 42-inch stakes, or open express bodies with canopy tops, 110 inches long, 42 inches wide and with 56½ inches clearance under the top. The last specified bodies have storm curtains.

ATLAS PRICE REDUCED.

Effective immediately the list price of the Atlas chassis is reduced to \$1655 f. o. b. factory, York, Pa.

Vice President and General Manager A. R. Cosgrove of the Atlas Truck Corporation makes clear in a public statement that this cut is due to a desire to stabilize truck prices and maintain sales to the end that the industry may not be disturbed in its onward stride.

Vice President Cosgrove also says:

"Those who are familiar with the development of the Atlas truck since its introduction in 1916 realize that many radical improvements were made during the war period and that the present Atlas resembles the original in name only. Alterations and improvements have invariably been directed toward more enduring quality and have naturally increased the material cost in direct ratio to the improvement in quality."



Puige 1½-Ton Truck, with Mead-Morrison Winch, Highly Efficient as Automobile Ambulance.

MASSACHUSETTS HIGHWAYS SNOW-BLOCKED UNLESS TRUCK OWNERS ACT

THE State of Massachusetts would like to have its highways cleared of snow this winter in order that the business of the state might go on uninterrupted, but wants the truck owners to pay the bill.

This was the way the arrow pointed at a conference held at the State House at Boston this month when Commissioner John N. Cole, head of the Department of Public Works, explained the situation to representatives of cities, towns, chambers of commerce and trucking concerns. He announced that but \$50,000 is available for the department to be used in cooperating with communities throughout the state, manufacturing interests and truck men, in equipping trucks with snow plows and using them everywhere along the main highways to keep them free from snow.

The meeting developed a general sentiment that the state should not depend upon private owners, but should furnish the trucks as well as the snow plow attachments, but this Commissioner Cole declared is impossible since the state had not appropriated the money.

The feasibility of the snow plow attachment was questioned by several representatives. Others contended that truck owners should bear the expense, since they would be the ones to profit by the plan. Some from the farming sections objected to the highways being kept so clean that it would be impossible for farmers' sledges and sleighs to travel with lumber or other products.

Albert Ennis, representing Youlden, Smith & Hopkins of Boston, which operates 20 trucks, including 11 Macks, four Pierce-Arrows, two Packards, two Vims and a Reo, seemed to voice the general idea of the trucking interests when he declared that the state should appropriate \$1,000,000 to keep the highways open. He suggested that the plows be allotted to trucks which must go over their routes regularly, and assured the commission of the cooperation of a number of trucking firms.

James M. Lennon, representing E. P. Winward & Son of Fall River, which has a dozen terminals in leading New

England cities and operates 32 trucks, 21 five-ton Pierce-Arrows, four Autocars and four Reos, and has a number of big Pierce-Arrows under order, promised full cooperation on the routes covered by these trucks.

POWER WINCH PERFECTS AUTOMOBILE AMBULANCE.

A high degree of utility has been obtained by the Standard Garage, Toledo, O., which has a special type emergency or repair truck that has unusual qualities to recommend it to service station and garage men. The truck is a 1½-ton Paige, on which has been installed an angle steel frame with a narrow roof above it. This frame has a central longitudinal rail on which is suspended on a roll a steel cable hoist, and this hoist can be operated by a Mead-Morrison truck winch, so located that it can be driven by the engine. At the rear of the truck are two legs that are pivoted on the frame and may be dropped under the axle of any inoperative machine. With the hook or sling of the hoist secured to either end the vehicle may be elevated sufficient so that it may be towed. This manner of towing insures against damage and a car or small truck can be hauled wherever desired.

The frame on the truck chassis is very strongly built and it is so designed that whatever the weight lifted there is no insecurity of the machine. The winch has capacity for lifting nearly 10,000 pounds, and no matter in what manner a car or truck may be disabled it can be handled quickly and readily and entirely by power. The value of the equipment is in the economy of time and labor and the superior service for the public.

COL. SMITH VICE PRESIDENT OF REPUBLIC CO.

John N. Willys, president of the Republic Motor Truck Co., announces that at a meeting of the board of directors of that company, held in New York, Nov. 5, W. J. Baxter, first vice president of the company, resigned that position, and Col. Frank E. Smith, well known in the automotive industry, was elected a director and first vice president, to succeed Mr. Baxter.

Col. Smith arrived in Alma, Monday, Nov. 8, in company with Mr. Shepherd, treasurer of the company, and at once took up his duties. He will move his family permanently to Alma immediately.

Mr. Willys says that the selection of Col. Smith for this important position was made necessary by reason of the fact that neither Mr. Baxter nor himself are able to give the local situation the time that the business of the company demands.

Col. Smith will act in the capacity of the direct representative of the president and board of directors, and because of his long and varied experience in the industry will add great strength to the Republic organization.

DEALER SHOULD GIVE THE FACTS ON OPERATING COSTS TO BUYER

THE article in the October issue of **MOTOR TRUCK** in which John S. Gerety, manager of the Metropolitan Storage Co., 6 Barton Place, Worcester, Mass., pinned much of the blame for the present low and unprofitable haulage rates on the truck dealer and salesman stirred up something of a hornets' nest.

There were denials and alibis by dealers and salesmen. Also have come confessions.

Many salesmen have admitted that they regale prospects with figures as to the cost of operation that mean nothing in real life. They allege that they are forced to tell a man who is thinking of buying a truck that it costs but 15 or 20 cents a mile to run because if they don't someone else will and that someone else will make the sale.

It's a bad state of affairs and calls for action by truck dealers' associations everywhere. It's a reason why truck dealers should organize wherever they are not organized now. The revising of these standards and the fixing of a general rate below which dealers and statesmen will not penetrate is necessary to the future of the industry.

The writer is in a position to know that there are many truck owners in the haulage business today whose future programme is to run their truck or trucks for whatever they can get until they fall apart, and then quit the trucking game for good. This is particularly true of single truck owners. These fellows can make no provision for the future at present rates. Most of them know it and they are simply out to make a living from day to day and will leave

the haulage field flat when their truck falls down.

The retirement of all these men from the trucking profession is going to be a blow to the dealer and salesman. Their example will keep many from going into this business who would be buying trucks if rates were right and there was money to be made. The loss of sales and resales is going to be heavy, make no mistake about that.

Dealer the Victim.

The power haulage business was never in such a dilapidated state as it is right now. The slowing down of industry has minimized the demands for this service. The owner of one truck who depends on his vehicle for a livelihood is not going to allow that truck to stand idle if he can help it. It may be that his family eats only when the truck runs. He and his kind are dragging down the present subnormal rates to new levels. Any price is a good price at this time of day.

The dealer or salesman is to blame for this condition only through the part he may have played in putting the tariff down where it is. But he is to be the sufferer.

If the truck owner, whether of one vehicle or a fleet, could make ends meet and run his business on sane lines, thus being prepared when a truck gives out to immediately replace it with capital put aside for the purpose, the dealer and salesman would be in clover. No trucker who does not get an adequate return to care for depreciation, interest, overhead and all expenses incident to operation, is equipped to buy a new machine when the old one goes to the junk pile.

Present haulage rates do not foster resales or new sales. If the dealer is to blame for this condition the dealers' associations should take steps to provide the remedy, which appears to be a plain statement of operating costs to the prospect.

Takes Dealer's Word.

The man who buys a truck and is told that it will run a mile at a cost of from 15 to 20 cents usually has enough confidence in the dealer to believe that this is so. So few owners keep cost records—this being especially true of those who have but one truck—that their only knowledge of the outlay entailed in keeping a truck going is based on the seller's statements.

These owners are naturally satisfied with a profit of 10 cents a mile when they run 50 or more a day, particularly when they drive their own machines, and driver's pay is one of the principal items of cost. When they are getting 25 or 30 cents a mile they feel that they are making good and only discover their mistake when the truck begins to wear out and they start to wonder where a new one is coming from, or what they are going to do for a living when the old truck sings its swan song.

There is no argument over the fact that the dealers who put operating costs as low as from 15 to 20 cents are not few. This may clinch one sale, but it is a case of taking care of today at the expense of tomorrow.

Dealers' associations should recognize that conditions today are not what they have been. This is a real situation and calls for action.

BETHLEHEM TRUCK A TRAVELING DENTAL OFFICE.

Of more than passing interest is the purchase of a motor chassis by the city of Scranton, Pa., to be used as a traveling dental office. The chassis, which is a Bethlehem Motors Corporation Model "K," is being fitted up with a special body provided with a dental chair, instrument cabinet, running water and all of the sanitary conveniences of a first class dental office. The dentist will cover all the schools of the city, traveling constantly, and a campaign of oral hygiene will go on throughout the year.

All school children will be required to submit to a dental examination, following which corrective measures will be taken, the whole campaign being intended as a constructive movement to urge on school children the value of good teeth. It is believed that other cities will adopt similar measures. W. G. Clay, assistant general sales manager of the Bethlehem Motors Corporation, credits the sale to the unusual head work displayed by a Bethlehem salesman.

Trucks, pumpkins and shocked corn are pals of recent days. The truck now goes right into the fields and delivers the product direct to market. The accompanying illustration shows a Service truck awaiting its load.



INDUSTRY SEES BUSINESS REVIVAL

STRONG CREDIT ARGUMENT

BY HOAGLAND, SIGNAL CO., VICE PRESIDENT

M. B. Hoagland, vice president of the Signal Motor Truck Co., Detroit, Mich., offers a powerful argument for the extension of credit to the truck industry in the following:

"If the banks cannot cooperate with the small business man and farmer in the purchase of a truck, or the one who is short of ready cash, then only the large corporations will be able to avail themselves of the economy and speeding up incidental to motor truck operation.

"Purchasers of motor trucks deserve the fullest cooperation from banks, as they are builders of business and values. All available credit, commensurate with sound finance, should be granted the motor truck operators, who are the empire builders of the country.

"They have reached out and reclaimed vast territories for business, have brought the farm close to the city, and have been responsible for competition which has greatly increased the efficiency of transportation. Trucks that add a permanent value to the resources of any section of the country should be placed in the hands of as many owners as possible."

SOME DUPLEX OPTIMISM.

President H. M. Lee of the Duplex Truck Co., Lansing, Mich., refuses to be disturbed by the present situation in the automobile industry. In a communication to his organization he breathes optimism. Among other things he says: "It is no time for impatience or discouragement, but rather a time for cleaning house, for casting out needless expense, for cutting wasteful overhead, for eliminating the unnecessary and for putting business back on the bedrock of common sense."

NEW CHEVROLET CONSTRUCTION.

The Chevrolet Motor Co. has been formed in Oregon and work has been begun in Portland on a new \$140,000 Pacific northwest warehouse and zone headquarters building. This company will conduct the entire Chevrolet wholesale business in both cars and parts in the Pacific northwest, including Oregon, Washington, Idaho and Western Montana. W. H. Douglas is sales manager and Charles L. Dunham assistant. Both are veteran Chevrolet men.

LOCOMOBILE DIVIDEND.

The Locomobile Co., which also produces Riker trucks, has declared a regular quarterly dividend of 1¼ per cent. on the preferred stock.

MERGER TIME EXTENDED.

The reorganization committee of the Maxwell Motors Co., Inc., and the Chalmers Motor Co., announced Oct. 28 that the time for the deposit of stock, unsecured notes and claims for the exercise of the minimum rights of purchase under the plan has been extended to Nov. 15. Stockholders who failed, however, to exercise their rights of purchase and to make their initial payments on or before Oct. 27 are now required to pay a penalty of 25 cents for each \$100.

Time for filing applications for new stock in excess of the minimum rights of purchase and to make the initial payment equal to \$10 in respect of each share of Class A stock applied for has been extended without penalty to the close of business, Dec. 1.

The committee states that more than 85 per cent. of the outstanding notes and claims have already assented to the plan and that there has been deposited more than 80 per cent. of the outstanding 804,524 shares of the Maxwell and Chalmers company.

THE WAY THE WIND BLOWS.

The Continental Motors Corporation resumed operations in several departments of its plant at Muskegon, Mich., Nov. 9, after a shut down of three weeks. This factory normally employs 3000 men. New employees are being hired daily.

A \$300,000 ADDITION.

The Lycoming Foundry & Machine Co., Williamsport, Pa., is building a one-story addition, 240x560 feet, at a cost of over \$300,000 for construction and equipment. The concern manufactures gasoline engines, automobile parts, etc.

LUMBER PRICES CUT.

The Retail Lumber Dealer's Association of Pennsylvania on Nov. 7 announced an average cut of about 25 per cent. in lumber, which puts the price of this commodity from 19 to 39 per cent. below prices prevailing in March.

BIG SALE OF MACKS.

For the nine months ended Sept. 30 last the International Motor Truck Corporation shows net profits, after charges and Federal taxes, of \$3,114,332, equal, after preferred dividends, to \$7.99 per share earned on 283,108 shares of outstanding common stock of no par value.

TO SPEND \$500,000 ON TRUCKS.

Indianapolis, Ind., is planning a \$500,000 bond issue for the purpose of completely motorizing its fire department.

GOODYEAR CO. HAS GREATEST

SALES YEAR IN HISTORY DESPITE DEPRESSION

Despite the present business depression the Goodyear Tire & Rubber Co., Akron, O., closed the greatest sales year in its history on Oct. 31. Total sales for the fiscal year exceeded \$205,000,000, against \$167,000,000 in 1919 and \$9,560,000 10 years ago.

In a recent statement Vice President Stadlerman said in part: "On the threshold of a new fiscal year, and in spite of existing conditions, we find ourselves in the most favorable strategic situation, from a sales standpoint, that we have ever enjoyed. Notwithstanding all the difficulties we are having to confront, our present position in the trade makes my conviction absolute that the situation in our particular industry is wholly temporary."

According to figures compiled in Akron, there are 7,579,000 automobiles in the country and less than 6,000,000 tires in excess of normal stocks now on dealers' shelves. On this basis reduction in tire production means severe shortage of tires next spring, in the opinion of officials in rubber factories in Akron.

READJUSTMENT UNDER WAY.

Archer Wall Douglas, chairman of the Committee on Statistics of the Chamber of Commerce of the United States, in his monthly report issued Nov. 7, sees immediate post-war readjustment without fear of panic. Among other things, he says:

"The entire commercial world is setting its house in order by reducing commitments, collecting outstanding accounts and bringing down stocks of merchandise to the requirements of reduced demand. And it is all being done soberly and advisedly. All are awaiting that psychological time, the first of the year, when the current of events and the general trend shall be more readily discerned and more easily interpreted."

ALL-AMERICAN OUTLOOK GOOD.

The financial affairs of the All-American Truck Co., Chicago, Ill., are showing improvement and it is anticipated that the storm will be weathered without the appointment of a receiver. A number of the creditors have agreed to a continuance of the business without a receivership. It is expected that a well known truck man will be put in charge of the company.

PACKARD DIVIDEND.

The Packard Motor Car Co., Detroit, has declared a quarterly dividend of 2½ per cent. on its common stock.

TRUCK A NATIONAL ASSET TO U. S. A.

ELIMINATION OF FEDERAL TAXES ON TRUCK TO BE ASKED OF CONGRESS

The elimination of Federal taxes on motor trucks on the ground that motor truck transportation has become a distinct transportation unit and a national asset will be urged at the next session of Congress, which opens in December.

Uniform registration of motor vehicles is another important question which will be agitated at the coming session.

NEW KENTUCKY TRUCK LAW.

The new schedule of registration fees and the other provisions of a new law affecting trucks goes into operation in Kentucky, Dec. 2. The lowest truck fee is \$22 for 1000 pounds or less. For from 3001 to 4000 pounds the rate is \$50, and it increases correspondingly until the rate for 9001 to 10,000 pounds is \$150. For over 10,000 the sum of \$50 is added for each extra ton.

The law also provides that no vehicle whose gross weight exceeds 15 tons shall be operated upon the public highways without special permission. This gross weight must be so distributed that the maximum weight per inch width of tire in the case of iron or steel does not exceed 500 pounds, and for solid rubber tires 800 pounds. In addition, every truck and trailer must be marked conspicuously with its load capacity and no vehicle may haul more than two trailers. Under the new laws, motor trucks must carry rear view mirrors.

TRENTON FAIR TRUCK SHOW.

The power truck display at the Trenton, N. J., fair, Sept. 27-Oct. 1, equaled in volume and variety many of the big indoor truck shows. Among the trucks exhibited were; Acme, Apex, Commerce, Garford, GMC, International, Samson, Traylor, Winther, Day-Elder, Dearborn, Norwalk, Autocar, Stewart, Selden, Brockway, Hurlburt, Pierce-Arrow, Kissel, Kelly-Springfield and Rowe.

In addition to the many chassis shown a large number of trucks with special bodies for farm use were exhibited. Many of the trucks were pneumatic tired.

LONG BRANCH TRUCK SHOW.

Every make of truck and automobile sold in New Jersey were shown at the Monmouth county exhibit at Long branch, which closed Nov. 6. There was also a representative display of farm implements and tractors. The show was housed in a new building and its success means that an annual show at this point has become an established institution.

WARNER NELSON SALES CHIEF.

The Nelson Motor Truck Co., Saginaw, Mich., has appointed Cecil B. Warner as general sales manager. He will also retain his duties as chief engineer. He designed the present line of Jumbo trucks, as well as several other well known makes. Allan Campbell, formerly of the Power Farming Press, St. Joseph, Mich., has been named assistant sales manager. Mr. Campbell's contact with farmers and dealers and his attendance at scores of truck demonstrations should prove a strong asset for the company.

NEW DENBY FARM MODEL.

The Denby Motor Truck Co., Detroit, is making ready to market at an early date a new farm model, which is intended to combine all the requirements of the farmer. It will have a 1½-ton capacity. This truck will be of standard 56-inch tread, pneumatic tires, 130-inch wheelbase, electric lights, a speed radius up to 25 miles per hour and choice of special farm body. It is expected that the new model will be ready for shipment in January.

TO PRODUCE TRUCK WHEELS.

Phineas Jones & Co., 305 Market street, Newark, N. J., has begun work on a one-story brick building, the first unit of its proposed plant. The company will employ 200 persons in the manufacture of truck and automobile wheels, demountable rim, etc.

P. O. TRUCKS FOR SAFETY.

Postmaster Roland M. Baker of Boston has notified the Safe Roads Federation of Massachusetts that he has given instructions to the drivers of the 161 cars and trucks of his department to operate them under the windshield emblem of the federation.

TRUCK DOES 300 MILES ONE DAY AND 86 THE NEXT, 1158 A WEEK

The Salts Textile Manufacturing Co., Bridgeport, Conn., has a three-ton FWD truck which does a 300-mile jaunt every other day. When it is not on this long haul its daily run is 86 miles. In a week it travels 1158 miles, which is at the rate of 58,000 miles a year.

One day the truck runs from Bridgeport to and from New York city and the next it goes from Bridgeport to Philadelphia and back. Two drivers are used, one being responsible for the truck and the other serving as assistant. On the Philadelphia trip the men take turns driving. The truck leaves Bridgeport on the long haul at 5 a. m. and is home at 6 p. m.

204 MILES IN 13 HOURS.

R. W. Knight, leading dock foreman, reports a recent record trip in a Transport Model 20 from Saginaw, Mich., to Detroit, the round trip of 204 miles being covered in 13 hours and 15 minutes of actual running time. In addition to facing rough roads time was lost in the crowded thoroughfares of Detroit. At one point near Holly, such bad clay hills were encountered that the truck was forced to crawl along at a snail's pace.

FOUR AUTO CAR MODELS.

The Auto Car Co., Ardmore, Pa., will concentrate on four models in 1921. Sizes and prices follow: 1½, 2-ton capacity, model "F," 97-inch wheelbase, \$2300, and model "G," 120-inch wheelbase, \$2400; heavy duty 3½-ton, model "Y," 120-inch wheelbase, \$4350; model "B," 156-inch wheelbase, \$4500. The last two mentioned were added to the company's line a few months ago.



FWD Three-Ton Truck, Which Averages Nearly 1200 Miles Weekly for Bridgeport, Conn., Firm.

LATE DEVELOPMENTS IN MANY LINES

TANK WAGON PRICES OF GASOLINE REDUCED ONE CENT A GALLON

Tank wagon prices of gasoline were reduced one cent a gallon in states in which the Standard Oil Company of New Jersey and the Standard Oil Company of Louisiana operate, it was announced Nov. 14 by Walter C. Teagle, president of the New Jersey company.

States in which the reductions were effective include New Jersey, Maryland, Virginia, North Carolina, South Carolina and the District of Columbia, in which the Standard Oil Company of New Jersey operates, and in Louisiana, Tennessee and Arkansas, in which the Louisiana company operates.

The reduction in price is not the result of lower costs, either of crude oil or labor, Mr. Teagle said, but is a movement on the part of the company to aid in the lowering of prices as part of the general commercial adjustment.

Prices of tank wagon gasoline, under the reduction, will vary in the different states, it was explained, owing to differences in freight costs. The effect upon the retail price generally was not predicted by company officials. In New Orleans the price was reduced to 28½ cents. The New Jersey price previous to reduction was from 31 to 33 cents.

CLIFFORD F. MESSINGER CHAIN BELT CO. SALES MANAGER.

The Chain Belt Co., Milwaukee, Wis., manufacturer of Rex chains, concrete mixers and elevating and conveying machinery, has appointed Clifford F. Messinger as general sales manager, succeeding L. C. Wilson, who has taken the post of secretary of the Federal Malleable Co., an organization which is closely associated with the Chain Belt Co. The latter company has also named C. E. Stone as assistant to the vice president, and J. A. Monahan as purchasing agent.

Mr. Messinger, a Yale graduate, has been connected with the organization since 1911, having been advertising manager of Rex Mixer sales and assistant to the vice president. He was recently honored by the appointment as chairman of a group of nationally known construction machinery manufacturers associated for the purpose of developing foreign business.

STANDARD PARTS PLANS.

Stockholders of the Standard Parts Co. met Nov. 10 and ratified a plan which calls for bankers' loans to the company of \$4,000,000. At the conclusion of the meeting it was understood that stockholders had already subscribed to the preferred stock to the extent of more than one-third of the minimum.

NELSON CHANGES PRICE LISTING POLICY; NO REDUCTION.

The Nelson Motor Truck Co., Saginaw, Mich., has issued a new price schedule for its Jumbo trucks, which looks different on paper, but on paper only. No reduction has been made, the change being simply in the plan of listing the price so as to conform with methods now prevailing in the industry.

Hitherto the price of the Jumbo models has included complete equipment. Hereafter chassis prices will be given. Such extras as cab, curtains, fore doors, windshield, electric equipment, radiator, shutters and pig-tail towing hooks have been standard equipment. Hence forth the chassis price will be given and the purchaser of these extras will be optional with the buyer, the prices being listed separately. No alterations have been made in the design of the Jumbo models aside from this extra equipment.

During the period when the cost of all merchandise soared Jumbo trucks were advanced only enough to cover the additional costs of material and labor. The cost of these latter commodities have not come down and until they do there seems no possibility of a reduction in truck figures.

THE COMING TRUCK SHOW

The time—Jan. 3-8, 1921, inclusive.
The Place—New York City.
The Site—12th Regiment Armory.
The Location—Between 61st and 62nd streets.
The Manager—Theodore D. Pratt.
The Backer—Motor Truck Association of America, Inc.
The Beneficiary—The Truck Dealer.
The Features—Many and Varied.
The Outlook—All Space Taken.

NO CHICAGO TRUCK SHOW.

Lack of available space has apparently put an end to the efforts of David Thomas, general manager of the Motor Truck Manufacturers' association, to stage a truck show in Chicago during automobile show week in January. There are indications that a truck show will be held in that city either in the spring or fall, a huge tent at Grant park, a central point, housing the event.

TO KEEP PRESIDIO TRUCKS.

The trucks and automobiles stored at the Presidio will not be sold as they are needed for army purposes. This will be good news to California dealers, who have had prospects hold back in the belief that these vehicles would be sold at a low price.

TOWER MOTOR TRUCK CO. TO DOUBLE PRODUCTION FOR COMING YEAR

The Tower Motor Truck Co., Greenville, Mich., is going ahead with plans to double production in 1921. The chief feature of this enlarged programme is the construction of a building to provide for 9000 square feet of floor space, work on which is well under way. This structure will house a machine shop and stock room and will thereby release 4000 square feet of floor space to be added to the assembly department.

New machinery will be installed and the additional space and equipment will allow a production of 10 trucks a day.

This company's line was completed this year with the addition of a 1½-ton model to its 2½ and 3½-ton trucks already in production. No change is contemplated for 1921 in this regard, the activities of the concern being concentrated on these three models.

Dealer organizations are already being built up to cope with the increased production.

RAILROADS ON HIGH SPEED.

The railroads of the country, which were ranked as highly inefficient but a few months ago, are rapidly getting into a stride which will force motor trucking interests to show signs of life in order to stay in the running. Among the new records are the production of 40,232,000,000 net ton miles, the highest record figures ever attained in July, and in the same month the record average train-load of 769 tons was established. Add to this the fact that the roads in June, July and August succeeding in digesting all of the accumulated freight which banked up in terminals and sidings during the switchmen's or "outlaw" strike in the spring of this year, and it is evident that the railroads are going some.

SALES MANAGERS MEET.

The National Association of Motor Truck Sales Managers holds its annual meeting at the Hotel Statler, Detroit, the 18th and 19 of this month. Railroads as a market for motor trucks, the work of the National Automobile Dealers' association, potential markets, salesmanship and business principles will be among the subjects discussed.

MACK BRANCH AT COLUMBUS.

The Mack International Motor Truck Corporation has established a branch at Columbus, O., in charge of Y. B. Jones, formerly president and manager of the Lawrence Motor Car Co. A sales room and service station has been established.

WHY BEGRUDGE THE TIME TO TAKE CARE OF YOUR TRUCK

(By E. C. SHUMARD.*)

Just a few short years ago everybody who had hauling to do used horses. Horses were slow and did not deliver the large quantities of goods that the motor truck of today delivers. Horses were a risky investment because they were likely to sicken and die. Horses were filthy upon the streets and within their stables. Horses were sometimes vicious and would kick, bite or run away, causing damage and, many times, death. Horses required great space in which to live, to store their food and to do their work.

With all of these—and many other drawbacks—how little was thought of the great amount of time that was spent in their care; how few cases there were where those owning and working them kept a record of the cost of operating. In a few years the motor car has practically displaced this method of transportation, but how vastly different is the attitude of the owners of motor trucks.

Let us make some comparisons between the care and cost of teams and motor trucks.

It would require probably three three-horse teams to do the amount of work that can be done with a five-ton truck. Nine horses, with at least two "spares," making 11 horses, must have the following attention:

- 1—Fed three times a day.
- 2—Watered three or four times a day.
- 3—Hitched up and unhitched two or three times a day.
- 4—Rubbed and bedded every night.
- 5—Stable cleaned every day.
- 6—Curried every morning.

- 7—Washed and extra attention once a week.
- 8—Taken to the shoeing shop about every 10 days.
- 9—Nine sets harness to clean, oil and repair.
- 10—Mow to be filled with hay, corn and oats to store.
- 11—Three wagons to grease every three to six days.
- 12—Upkeep and washing of three wagons.

The above items are things that must be attended to before and after the regular operations of transportation. On Sundays and holidays, or when standing idle, much of this attention must be given, that is, feeding, watering and care.

This preliminary and finishing work in connection with the operating will require:

Three drivers.

Three helpers in most cases.

One stable man.

It is not the intention here to make cost comparisons, but rather to show graphically how many large business concerns which were formerly users of horse drawn equipment, were perfectly satisfied with the great amount of attention and non-productive labor attending this system of hauling.

Since the motor truck has practically displaced the horse equipment the parallel of preliminary work, together with the regular operations, are about as follows:

- 1—Space required for storing five-ton truck with fixtures and supplies is less

than one fifth that of the horse equipment.

2—Examination of every bolt and exposed bearing on the truck every evening, adjusting and oiling will not consume one-fifth the time required by the men to unhitch and stable the nine horses.

3—Washing the truck requires very little more time than washing a wagon.

4—Repairs on the one truck will not require more time than repairs to one unit of the horse equipment if truck received the intelligent care required.

Why is it that the truck owner does not require the operator to learn his profession?

Railroads would not trust their locomotive to a section hand or a horse driver. They require that the engineer shall know his business and the average engineer receives little more pay than the truck operator.

Why cannot the purchaser of a \$5000 truck, which must travel rough roads, climb and descend bad hills instead of a smooth, level track, realize that it is an intricate piece of machinery, twice as efficient as a railroad locomotive, and must be understood and appreciated?

Why not compel the operator to fit himself for the position and be able to pass an examination before turning over to him this valuable property? Why not have one man put in each day on the truck one-tenth of time required to take care of an equivalent horse equipment?

*Chief Engineer, the U. S. Motor Truck Co., Cincinnati, O.

DEALER HOST TO DRIVERS.

The Philadelphia, Pa., branch of the Federal Motor Truck Co. has inaugurated a new departure which promises results by holding regular "get-together" meetings of drivers of Federal trucks. These meetings promise not only to get greater service from both trucks and drivers, but also to create ambition among the drivers, from which future prospects will be born.

NO PRE-WAR PRICE LEVELS.

Senator W. M. Calder of New York, chairman of the Senate committee on reconstruction and production, following a preliminary investigation of housing conditions and other problems, expresses doubt that any big price declines will come soon and that prices ever will reach pre-war levels.

A. J. LAMBERT RESIGNS.

Arthur J. Lambert, who has been with the Garford Motor Truck Co. for eight years, resigned as service manager of the New York branch on Nov. 1.

New Truck Prices

The Napoleon Motors Co., Traverse City, Mich., has increased the price of its model 9, one-ton truck, from \$1385 to \$1535, and of its model 11, 1½ tonner, from \$1660 to \$1860. The price of the model 7 is \$1500. These prices are guaranteed to July 1.

The Triangle Motor Truck Co., St. John's Mich., has reduced the price of the following models: 1½ ton, \$2450 to \$2350; two ton, \$2850 to \$2700; 2½ ton, \$3150 to \$2950. These prices are guaranteed to June 1.

The Witt-Will Co., Inc., Washington, D. C., has reduced the price of its 2½-ton model from \$3250 to \$3150.

The Ward La France Truck Corporation, Elmira, N. Y., has advanced the price of its five-ton model from \$5490 to \$5590, and on its 3½-ton model from \$4490 to \$4690.

The Keystone Motor Truck Corporation, Oakes, Pa., has reduced the price on its two-ton model from \$2550 to \$2450. This price is guaranteed to Jan. 1.

1920 FREIGHT CAR RECORD.

A new record for 1920 in the number of railroad cars carrying commercial freight was set in the week ending Oct. 9 when the total reached 1,009,787, the American Railway association announces. It was the first time the million mark was reached this year and is close to last year's record week of 1,011,422 cars.

\$300,000 ENGINE COMPANY.

Eugene M. Bournonville, developer of the widely used oxy-acetylene cutting and welding system and the introducer into this country of the compressed acetylene system, has organized the Bournonville Rotary Valve Motor Co., a \$300,000 corporation, to exploit his rotary valve engine, with headquarters at Jersey City, N. J.

JACKSON PRICE ADVANCED.

Jackson Motors, Inc., Jackson, Mich., has advanced the price on its 3½-ton model from \$4250 to \$4550.

ODDS, ENDS AND ANGLES OF THE INDUSTRY

RAILROADS COST GOVERNMENT \$656,000,000 IN FIRST SIX MONTHS

Private operation of the railroads for the first six months after the end of Federal control will cost the government a total of \$656,000,000, the Interstate Commerce Commission announced on Nov. 3.

Operating revenues of the roads for August increased only about \$83,000,000 as compared with August of 1919 while operating expenses advanced more than \$300,000,000.

The August expenses, however, included increased wage accruals of \$79,000,000 and war taxes amounting to more than \$3,000,000.

For the eight months ended with August operating revenues amounted to \$3,822,000,000, compared with \$3,283,000,000 in 1919, while operating expenses amounted to \$3,763,000,000, as against \$2,808,000,000 for the first eight months last year.

HARTFORD PARTS CO. GROWS.

The Hartford Automobile Parts Co., Hartford, Conn., has put Assistant Treasurer E. L. Pollock, Jr., in charge of the plant it recently acquired at Kalamazoo, Mich., from the Acme Universal Joint Manufacturing Co. The assembling and lighter work will be carried on in Kalamazoo, while the heavier operations will be done in the Hartford factory. This company is marketing a new hydraulic compensation clutch which is a rotary shock absorber installed on the propeller shaft that absorbs all starting shocks.

HARE'S PROMOTES DEVLIN.

Earle E. Devlin, formerly special representative and more recently assistant to the general sales manager, has been made "Office Sales Manager" for Hare's Motors, Inc., this being a new post, the holder being responsible for all sales and specifications taken care of at headquarters. Devlin was with the Buick and Paige people in Philadelphia previous to his present connection.

TO MAKE STEAM TRUCKS.

The Richard Carter Automobile Co., which is to manufacture steam trucks, automobiles and tractors at Gulfport, Miss., under patents granted Dr. Richard Carter of Hammond, La., is expected to be in operation by Dec. 1.

NEW 'FRISCO SALESROOM.

J. W. Leavitt & Co. is opening a truck service station and salesroom in San Francisco for the distribution and maintenance of Oldsmobile and Economy trucks.

TIRE PRICES REDUCED.

The Goodyear Tire & Rubber Co. and the Ajax Tire and Rubber Co. announced price reductions Nov. 12. They range from 7½ to 14 per cent. on various types of tires by the Goodyear Company, the 7½ per cent. reduction being on weather tread cord casings and the larger reductions on fabric tires and casings. The Ajax reductions run from 10 to 15 per cent. on all grades and types, the lower rates being made, according to President de Lissier, to stimulate sales.

The United States Rubber Co. and other tire concerns had previously announced reductions. The Miller Rubber Co. has also announced a cut.

EASTERN SYNDICATE TO CARE FOR REFINANCING OF GOODYEAR CO.

Directors of the Goodyear Tire & Rubber Co., Akron, O., announced following a meeting on Nov. 13 that arrangements had been completed for refinancing by an eastern syndicate with "inventories on finished product" given as security.

The directors passed the regular quarterly dividend on common stock. In a statement it was declared that this step was taken "in view of the present financial and business conditions and in order to conserve the cash resources of the company."

A. S. M. E. TO TALK TRANSPORTATION.

Transportation will be the chief topic of discussion at the annual meeting of the American Society of Mechanical Engineers at the Engineering Societies building, 29 West 39th street, New York city, Dec. 7-10. Motor trucks and New York terminal problems will be among the phases treated by experts. Fuel and power will also be considered at some of the sessions.

HARVESTER PLANT BUSY.

The motor truck plant of the International Harvester Co., at Akron, O., is busier today than it has ever been. More workers are employed than ever before. When the new Ft. Wayne factory is ready in the spring the Akron works are to be used as machine shops.

BROWNE WITH SOUTHERN.

The Southern Motor Manufacturing Association, Ltd., Houston, Tex., has appointed W. O. Browne general sales manager. He was formerly district manager and special representative for the Bethlehem Motors Corporation, East Allentown, Pa.

TRIUMPH MOTORS CORP. BUILDING NEW PLANT AT MEDINA, N. Y.

The Triumph Motors Corporation, which is now operating in a small way at its factory at 350 Riley street, Buffalo, N. Y., expects to occupy its new and larger building at Medina, N. Y., by Feb. 1. The latter building is now in process of construction and the work is being rushed.

The corporation is not planning to manufacture on a mammoth scale in 1921, its programme calling for from 300 to 600 machines. The models now being turned out have been tested by the trade and pronounced highly satisfactory.

The Triumph trucks will comprise one, two, three and four tonners, with a special one-ton speed wagon. They will be known as the T. M. C. line. Their dependability will be stressed in all publicity matter. They will be made up principally from standard parts.

NAMES MEXICAN AGENT.

The New Orleans Motor Truck Co. has granted the distribution rights for the New Orleans truck in Mexico to a firm in Mexico City, according to announcement by Sales Manager John D. Swift.

J. H. KELLY LEAVES PARKER.

J. H. Kelly, Indianapolis, Ind., has concluded his services with the Parker Motor Truck Co. He was formerly with the FWD Auto Co. and also served with the government in its work of distributing trucks to the various state highway departments.

TRAFFIC DISTRIBUTORS.

New Traffic distributors have been appointed as follows: Broad Motor Co., Bethlehem, Pa.; Kress & Co., Hazelton, Pa., and W. F. Ames & Co., Coatesville, Pa.

LOADOMETERS TO CHECK TRUCKS.

The state highway commissioner of California has purchased six loadometers and will campaign against the overloading of trucks on highways of the state.

R. T. WALSH IN NEW POST.

The Apex Truck Co., Ypsilanti, Mich., has appointed R. T. Walsh as advertising manager. He formerly held the same post with the King Motor Car Co.

MANUFACTURERS TO MEET.

The Motor Truck Manufacturers' association will meet in Detroit at the same time the sales managers assemble, Nov. 18 and 19.



Building Its Own Road Bed — to Haul America's Freight

The transportation problem of America will eventually be worked out—not on steel rails only, but on hard pike roads; not with engines and box cars only, but with motor trucks and trailers. This means more roads—better roads. The motor truck is today helping to build better roads that it may use them to the benefit of the community.

Ross Steering Gears are playing an important part in this work. The exclusive screw and nut design provides an enormous bearing surface. This bearing surface, in turn, means greater efficiency, greater safety and reliability, and easier steering—both in the motor trucks that are employed in building the road-bed and in those which later will haul freight and express over it. Ross Gears are now standard equipment on 418 different truck models from 165 different manufacturers.

Further Information Furnished on Request

ROSS GEAR & TOOL COMPANY
790 Heath Street Lafayette, Indiana, U. S. A.

Ship by Truck
FOR SHORT HAULS

ROSS STEERING GEARS

THE STEERING GEARS THAT PREDOMINATE ON MOTOR TRUCKS

(When Writing to Advertisers, Please Mention the MOTOR TRUCK.)

A "Different" Truck Show

NEW YORK CITY'S 1921 Highway Transportation Show will be the most novel, different and spectacular exhibition that has ever been witnessed in the history of New York motor circles. The plan of the show, which will be held from Jan. 3 to 8, inclusive, at the 12th Regiment Armory, 62nd street and Columbus avenue, embraces a programme consisting of a series of special days, and each day will rival the other in making itself the day of the biggest event during the show.

Monday, the 3rd of January, is to be "Opening Day."

Tuesday—"Army Day."

Wednesday—"Motor Accident Prevention Day."

Thursday—"Highway Transportation Day."

Friday—"Farmers' Day."

Saturday—"Motor Truck Association Day."

Its purposes are to further demonstrate, both through discussion and display, the necessity for a national highway system to support the general and economic use of the motor truck. To further educate the general public in the economic advantages in the employment of the motor truck as a means of transport. To educate and sell prospective motor truck users.

Approximately 22,000 square feet out of the 23,000 square feet available for motor truck exhibits have been drawn for.

The representatives of 20 of the most prominent makes of trucks were at the drawing, which was made by lot—those contracting for the greatest amount of space having the first choice. Those who drew first were A. M. Welch, representing the Reo; P. N. Lineberger, representing the Rainier, and E. A. Travis, representing the Riker and Kelly-Springfield trucks.

Although many other makes of trucks will be exhibited, space for only those makes whose representatives had contracted and paid for exhibition space were allowed to participate in the drawing. The makes of trucks included in the drawing were as follows: Atterbury, Bessemer, Brockway, Clinton, Federal, Gramm-Bernstein, Indiana, Jumbo, Kelly-Springfield, Moline, Nash, Parker, Rainier, Reo, Riker, Selden, Service, Transport, Vim, Ward-La France and Highway Trailer.

The details of the show itself will be supervised by a committee of the dealers' division of the Motor Truck association. The personnel of the show committee includes A. M. Welsh, Reo, chairman; J. A. Innes, Brockway; W. H. Moore, Garford; Paul Campbell, Indiana; R. S. Locke, Federal; W. Lawson, Nash, and E. A. Travis, Locomobile.

The exhibits are to include trucks, trailers and accessories. The special educational exhibits are to include possi-

ble exhibits by the army, navy, Department of the Interior, Bureau of Economics, continuous tableau of transportation in all lands, model terminal, model traffic control, evolution of transportation, etc.

Altogether, the Highway Transportation Show, which will be held under the auspices of the Motor Truck Association of America, Inc., is certain to be of great interest to the city of New York. Show week will be a week of such educational value to motor truck users and the general public that it will be well worth the price of admission. Trucks, trailers and accessories will be shown.

The show committee states that it is the real desire of the Motor Truck association that the general public, as well as the motor truck users, attend the show, and the program of events for the six consecutive days is planned to be of interest to young and old, business man and farmer. Many attractions are scheduled which will be of interest to the entire family—mother, dad and the children. Says the show committee: "There is no reason why interest in the motor truck and highway transportation should be confined to the head of the family." Like the railway, the motor truck has become a common carrier and is rapidly becoming a medium of great convenience for every community and for every entire family within that community. The school boy of today is the builder of the great American highway of tomorrow, which will see the motor truck systematically cooperating with the railways and waterways for the greater prosperity of America. It is thought that the purposes of the show are of such a nature and of such broad scope that no avenue of endeavor but what will be influenced by their final accomplishment.

The basic reasons and purposes for holding this show are identical with those advocated by the Motor Truck Association of America, and are as follows:

1. To further demonstrate, both through discussion and display, the necessity and advantages of a national highway system which will support the general and economic use of the motor truck.

2. To educate motor truck users.

3. To further educate the general public in the economic advantages derived in the employment of the motor truck as a means of transport.

Series of Contests.

Included in the program are a series of contests offering valuable prizes to the winner. These contests will pertain particularly to the special days on which they will be conducted. As soon as detailed plans are completed, rules and awards for these contests will be made public. The program also contemplates a series of educational addresses by many national and eminent authorities on the absorbing subjects of the day.

Letters are pouring in daily to the Highway Transportation Show Headquarters, 144 West 65th street, requesting information, and General Manager T. D. Pratt and the show committee state that it is particularly gratifying to note the interest that is being taken in the coming show. Particularly is this satisfying in view of the fact that New York is the greatest motor truck market in the world, and probably the greatest user of the motor truck. It is estimated that there are over 35,000 motor truck users in this city alone.

It is contemplated that the exhibits will contain a number of special educational features on a scale which has never been attempted in a motor show heretofore. It is the plan of the committee that there will be a magnificent display depicting the evolution of transportation, starting from the time man first conceived the vehicle of transportation, and ending with the present day and the newest method of transportation now employed—the motor truck. It is probable that this display will also embrace all present methods of transportation; i. e., the railway, waterway, airway and highway.

Accident Prevention.

A new innovation in the Highway Transportation Show is "Motor Accident Prevention Day." Traffic control is now being made a considerable study by our larger cities; and particularly is this true in New York. The Motor Truck association desires to cooperate with New York city in minimizing the number of accidents daily, caused by careless drivers and a lack of knowledge on the part of the public of traffic regulations.

It is the hope of the Motor Truck association that this day will be of considerable assistance to the city in its campaign of education of the public.

For National Highways.

Vieing with this day will be "Highway Transportation Day," and will mean a united effort on the part of many organizations interested, who have advocated a national highway system. The Motor Truck association is strongly in favor of highways that "start somewhere and end somewhere," and the proposed system of construction advocated by the now famous Townsend bill.

The show committee is now considering a very unique decorative scheme, which will make other New York shows look well to their honors. It is planned that the decorations will not only be spectacular, but a delight to the eye.

Considering the extraordinary class of exhibits of the latest thing in motor trucks planned by manufacturers and dealers who have secured space for the show, indications are that the New York Highway Transportation Show of 1921 will eclipse anything of this nature heretofore attempted in the United States.

ORGANIZING 24-HOUR TRUCK SERVICE ON CHAIN STORE PLAN

THE NATIONAL CHAIN MOTOR SERVICE CORP. HAS FIRST UNIT GOING STRONG AT CHARLESTOWN, MASS.—IN \$125,000 BUILDING, WITH \$40,000 WORTH OF EQUIPMENT AND \$25,000 STOCK OF PARTS—BUYING POWER, STANDARDIZATION MECHANICAL DEVICES AND MANY INNOVATIONS FACTORS IN ECONOMY.

— By S. G. SWIFT. —

THE motor truck industry has always been characterized by rapid development and the biggest forward strides have usually been the result of exploited innovation. The plan of yesterday has ever been the reality of today, and the abnormal growth of the business has been marked by daring and expensive experiment. Growing efficiency has long demanded more general standardization, with consequent saving of time and money, and now, in answer to that demand, comes 24-hour truck and car service, dispensed by the chain store method.

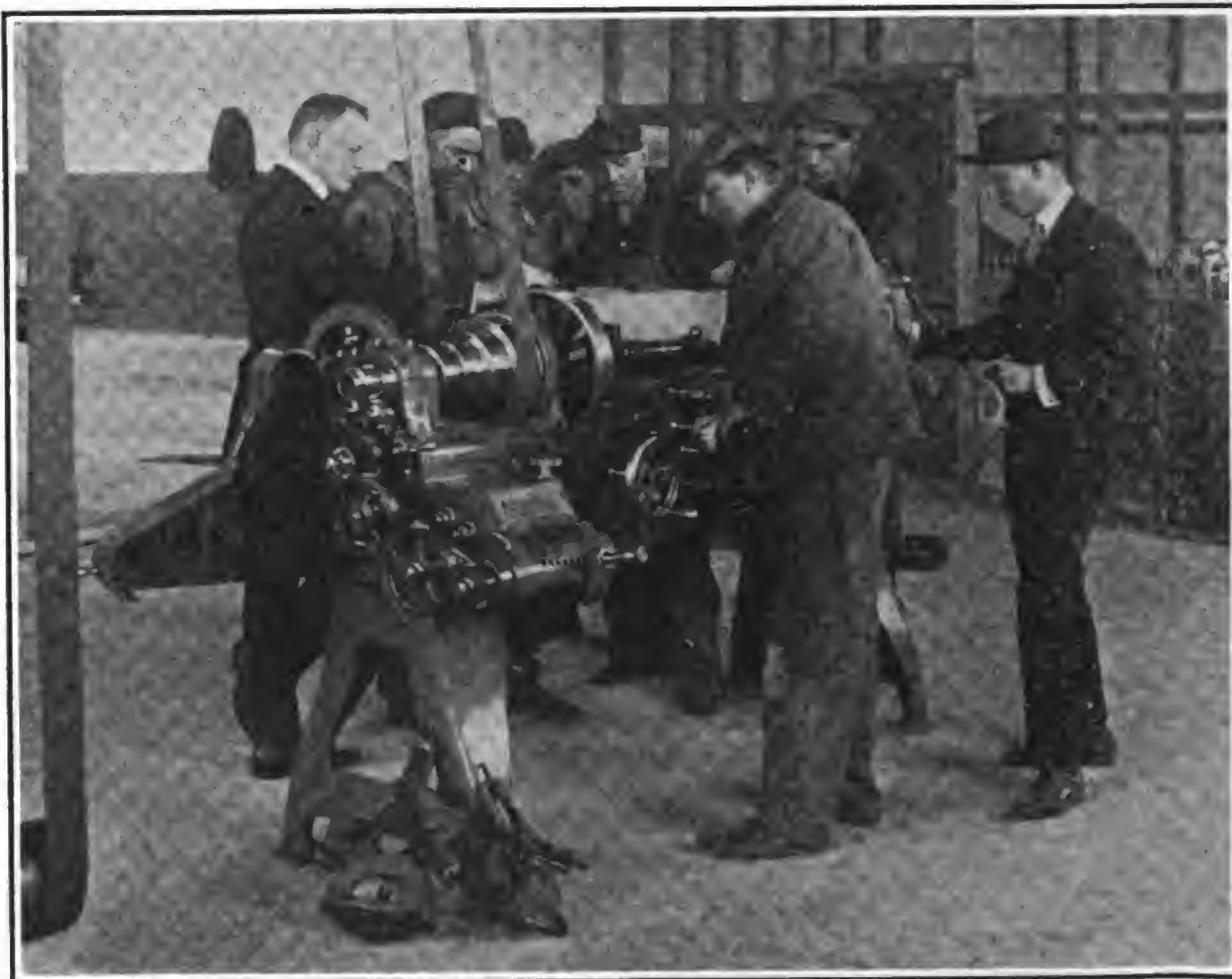
The National Chain Motor Service Corporation was formed in May, 1920, for the purpose of standardizing motor repair service by the chain store idea of merchandising. The para-

mount endeavor will be to give adequate truck and car repair service at a minimum of time and expense, and every shop in the proposed vast chain will be strongly organized on

a factory production basis with experts in every department, in addition to being fully equipped with the most modern labor and time saving machinery. All of which will make for perfection in service.

Through scientific methods of management and quantity purchase of material, overhead expenses will be at a minimum. A system of popular charges will be inaugurated as a result of these savings to take the place of the arbitrary and extravagant rates frequently met with at public service stations not properly equipped as to merchandise and machinery.

A glance at the personnel of officers and directors shows the names of men of prominence in the automotive and engineering world and as the success of an industrial or-



Company School for Mechanics—A Number of These Young Men Are Destined to Be Service Station Managers.

ganization depends almost wholly on its management, the new concern seems assured of competent administrative supervision.

The president is John C. Speirs, formerly general manager of the Autocar Co., factory manager of the Mercer Automobile Co., and the Locomobile Co. He is well known in the automotive world and much of the success of various companies with which he has been connected has been credited to him. The other officers are: Vice president, Frank Mossberg, president of the Mossberg Pressed Steel Corporation, vice president of the Standard Machine Co. of Rhode Island and member of the American Society of Mechanical Engineers; treasurer, Robert J. Holmes, member of the firm of Holmes & Worthen, corporation attorneys; director of Mexican Investment Co., Inc., Darien Estates, Inc., treasurer of International Abrasive Corporation and treasurer of the Fidelity Capital Corporation; director, Jeremiah G. Long, chief engineer of the Boston Woven Hose and Rubber Co., director in the United States Fuel Corporation, member of the American Society of Mechanical Engineers, the Boston Chamber of Commerce and the Cambridge Board of Trade; director, Harry Eisner, president of the Eisner-Lenk Electrical Co. and member of the Society Automotive Engineers; director, Nathan C. Harrison, treasurer of the Harrison Supply Co., director Fidelity Capital Corporation, president of the International Abrasive Co. and of the Queen's Mills (manufacturers cotton thread), director of the Manufacturers National Bank, Cambridge, Mass., of the Citizens National Bank of Boston, of the Dorchester Savings Bank (also a trustee), director of the John West Thread Co. and member of the National Association of credit men; director, William J. A. Bailey, formerly president of Bailey & Co., investment securities,

Boston, formerly connected with Federal Reserve Bank of New York, government loan division and formerly president of the American Hardware and Machinery Export Corporation.

William T. Richardson, formerly of W. T. Richardson & Co., engineers, is in charge of the development and expansion program for the company and is formulating many plans in regard to future building operations. Mr. Richardson is amply fitted for this position, having built the Boston arena and several of the larger theaters in Boston.

First Unit Operating Successfully.

The first unit of the chain is located at 128-134 Cambridge street, Charlestown, Mass. It has been in operation since September and is already on a paying basis the management announces. Plans for the next station are not yet complete, but it is possible that it will be located in the city of Norwood, Mass., where a location is said to have been offered by the local chamber of commerce, which is also ready to place at least half of the stock necessary to establish the plant locally.

Locations are already being sought in Worcester, Springfield, Providence, Hartford, New Haven, New London, Bridgeport, South Norwalk and New York, and it is planned to have the main highways between Boston and New York well covered within the next two years.

The station, now in operation, along the general lines of which the other will be designed, was erected at a cost of \$125,000, and is strictly fireproof. It contains approximately 20,000 square feet of floor space, and is about 100 feet long and 90 feet wide. The upper floor is used wholly as a repair shop and is reached by means of a ramp driveway with an angle of 30 degrees, which permits of easy entrance.

Space on this floor is allotted to the following departments: Tires and vulcanizing, battery, ignition, electrical, general repairs, machine shop, tool crib, radiator and sheet metal, accessory and stock, blacksmith and welding. It is well lighted by Fenestra type windows, and the roof is of truss construction, admitting of clear floor space.

Machinery to Make Any Part.

The equipment of the shop was installed at a cost of \$39,074, and contains practically every time and labor saving device known to the modern repair shop. As a matter of fact it contains more than this, being specially equipped with machinery for the manufacture of any desired part, and the personnel includes mechanics capable of turning out first class machine jobs. It is the intention of the company to buy all parts needed from dealers so far as this is possible, but if time can be saved by manufacturing the necessary part, the shop is equipped to do this.

All of the chain shops to be started will contain the same layout as the parent shop, which is as follows:

Two Manley two-ton portable floor cranes.

Six portable steel benches.

One Cincinnati universal cone-driven Miller.

One 24-inch G. & E. shaper.

One Champion 20-inch by 10 foot lathe.

One Champion 14 inch by six foot lathe.

One 14-inch Washburn sensitive hard metal drill.

Two St. Louis floor standard grinders.

One No. 60 Heald cylinder grinder.

One Landis 16 inch by 28 inch universal grinder.

One Landis 24 inch plain grinder.

Three Greenard arbor presses (20-ton capacity).

One No. 1 Racine power hacksaw.

One Franklin valve grinder.

One Morris radial drill.

One Silver upright 20-inch drill.

One Waterhouse welding outfit (complete).

One G. & L. turret lathe.

One Cataract precision lathe.

Thirty complete sets of small tools for mechanics, in addition to which a complete list of seldom used tools is available to the tool crib.

Department Heads Responsible.

Each department is in charge of a competent mechanic who is a specialist in his own particular line. He is paid at the rate of \$1 an hour. His helpers are general line men, the idea being that they can be used by departments other than their own if press of business warrants. These men are paid on an average of 85 cents an hour, depending on their proficiency. The department head is responsible for the time of the men under his charge and keeps detailed records of the jobs worked on, which are checked with the record in the main office each night.

Company Provides All Tools.

The mechanic who enters the employ of the company is requested to leave his

These Forms Tell the Story of Every Operation Concisely and Yet with All Necessary Detail.



Service Truck on White Two-Ton Chassis with Kelly-Springfield Tires, Which Is First Aid to Trucks and Humans.

own tools at home. The management has selected specially designed tools to be used in the work, and each man starting in is given a complete set. The chest is fitted with a Yale lock and the user is charged with the full value of the outfit. The kits are inventoried each week and the value of any tool unaccounted for is deducted from the weekly wage.

If a tool is broken while in use the inspector in charge of the tool crib is authorized to replace it and makes an account of the way in which the breakage occurred. All tools taken from the crib are charged to the man using them and must be turned back at the end of each working period. Lost tools are frequently a heavy item of expense in the operation of a repair shop and the management intends to keep this bill as low as possible.

Three-Shift System Used.

All mechanics work on the three-shift principle. Watchmen and tool crib men work 12 hours, and the office hours for the clerical staff are from 8:30 in the morning to 5 in the afternoon, there being no night force in the latter department.

All repairs and general service are laid out in a special manner. When the vehicle to be worked on enters the station the head inspector first looks over the job and then assigns different department heads to the case.

As the work goes forward he makes a general inspection of the machine, giving his report on a blank form specially prepared for such work. This blank gives detailed information regarding the running condition of the vehicle and approximates the time and money necessary to put it in first class condition, in addition to the charge made for doing the work requested in the first place. It is mailed to the owner, who is then solicited by a salesman with a view to getting the overhaul job at such time as the truck can be spared from the regular work.

\$25,000 Stock of Parts.

The time of each operation is kept by each department by means of a clock

with time stamping device, and the different cards are turned in to the general office, where the final charge is computed and the bill made out. The repair work is based on a flat charge of \$2 an hour, and all accessories and parts used, of which a \$25,000 stock is carried, are figured from a retail standpoint, thus assuring a profit on this end of the business.

It might seem to the uninitiated that the charge of \$2 an hour is somewhat exorbitant, but the opposite is more often true. Only such time as is actually used is charged, and the labor saving devices tend to speed up each operation to a great extent.

The writer was somewhat surprised to see a valve grinding job taken care of in 20 minutes by the efficient Franklin valve grinder, and the saving of time and money over the old fashioned hand method was very noticeable. All repairs made are guaranteed for a certain period of time, depending on the nature of the work, and it is apparent to even the layman that the amount charged, taking all things into consideration, is comparatively nominal.

The business of the truck owner is so-

First unit of National Chain Motor Service Corp., located at 128-134 Cambridge St., Charlestown, Mass. The entrance to the right leads to a ramp, the grade of which allows trucks to be driven to the repair shop on second floor on high speed.

licitated by two salesmen who were formerly connected with one of the large truck agencies. They call on all responsible owners and sign them up for the service. Cards are given to the different drivers, which allow the men to get work done at any branch station of the company. The bill for the work is sent to the owner and settlement is made monthly.

An extensive drive for business is now being made under the direction of Murray Breese, sales and service manager for the concern. Mr. Breese was formerly connected with the New York Sun, and has had much experience in publicity and advertising work. He plans to circularize every prospect in Boston and vicinity, the letters to be followed up by personal solicitation by his service salesmen, and in addition to this, will spend an appropriation of \$30,000 in newspaper advertising. It is to Mr. Breese that much of the present success of the plan is due, and he already has plans formulating which should do much to increase future business.

The first floor of the building is devoted wholly to general offices, storage space and truck and part washing machines. A Polarine oil tank of 500 gallons capacity and a gasoline tank of 20,000 gallons are placed on either side of the front door, although no gas or oil will be sold to any other than customers, as the concern has no desire to get into that end of the business, wishing to keep strictly within the confines of repair shop work.

Service Truck Has a Pulmotor.

The service truck deserves a paragraph to itself. It is a two-ton White chassis, equipped with Kelly Springfield caterpillars, and is specially geared to attain a speed of 40 miles an hour in emergencies. It carries a first aid kit and a pulmotor, the driver being trained in the use of both, and the authorities have made a special concession, allowing the machine to be equipped with a fire truck gong. They have also extended unusual speed privileges, so that the truck is a first aid for both automobiles and humans.



The body is especially built to allow the carrying of a large equipment, and a three-ton, one-man operated Manley crane is mounted on the rear.

Carries Complete Outfit.

All sorts of tools are carried to enable the speedy salvage of a wrecked machine, a complete list of which follows:

One Basline autowline, 1 Powersteel truckline, one wrecking truck, rubber tired; one towing pole, four crowbars of various sizes, two shovels, two Fairbanks log chains, four Fairbanks white lanterns, four Fairbanks red lanterns, one Presto tank, one Prestolite storage battery, one Beamolite searchlight, eight oak plank, one Prentiss vise, two sets Weed tire chains, one small tool equipment, two Fairbanks steel tackle blocks, 150 feet manila rope, six jacks of various sizes up to five tons.

This truck presents a very fine appearance with its neatly painted body and lettering, and has attracted much favorable comment.

Special School for Mechanics.

In keeping with the policy of the company to render perfect service to the truck and automobile owner, the engineering department recently decided that the average automotive factory trained man is not of sufficiently high caliber to insure service in keeping with the ideals of the organization. A number of tests were made among average mechanics to determine the analytical powers of these men, with the result that it was found that while approximately 60 per cent. of them could efficiently repair defects in a machine where such defects were pointed out to them, not more than 15 per cent. could analyze the car's trouble.

As a result of the test it was decided to allow the department, under the personal supervision of the engineer, C. N. Colstad, to institute and operate classes

for the men in such branches of the work as was thought advisable. A schedule was prepared calling for two one hour lecture periods weekly, the subjects taken up being: Theory of Engine Construction, Rear-End Construction, Common Motor Troubles, the Care of the Car, Transmission, Ignition and the Electrical System. The men have shown a hearty response to the training and much good is expected from the courses, which will be kept up through the winter at least.

Station Managers from Ranks.

All station managers will be recruited solely from the main plant at Charles-town, and all standardization of parts and methods of operating will also be worked out at that plant, which will be known as the main service station. Men who show exceptional merit will be carefully educated in the policies of the company, and from time to time, as occasion demands, will be sent to the new branches. It is practically impossible to exactly standardize the details of repair work, but so far as possible all shops will be operated alike and, with this in view, it is necessary for all managers to get information at first hand in order to conform to the standard.

Purchasing Power Money Saver.

The establishment of the many stations contemplated will go forward just as fast as it is possible for the management to perfect its plans. The great buying power of a chain of stations is apparent. The profit resulting from quantity purchasing is obvious, and forms the keystone of the money making possibilities of the organization, while the standardization of the various operations of repair work should also effect a material saving.

It is upon the shoulders of the pioneer that progress rests. Hewing and carving his way through forests of doubt and un-

certainly his trail marks the progress of civilization. This is true of life in general and may be applied to the automotive industry in particular. Chain merchandising seems to offer the fundamental idea of reduced merchandise costs. It has already worked out along many lines and while its application to truck service seems unusual, it nevertheless appears logical. The opportunity is here and the field is large. The National Chain Motor Service Corporation as a pioneer in the field deserves and will undoubtedly achieve the goal toward which its efforts are directed.

THE GENERAL MOTORS CORP.

IN NEW HANDS; DURANT OUT; DU PONT HEAD

The General Motors Corporation, which has long held a commanding place in the automotive industry, is now controlled by the powerful Du Pont and Morgan financial interests, an indication that leaders of finance place unlimited faith in the future of motor vehicle manufacturing. Pierre S. du Pont has been elected president, succeeding W. C. Durant, the founder and long the head of this great business organization. E. R. Stettinius of the Morgan Co. has been a director for some time.

Mr. Durant remains as a director. It has been announced that he will devote the next few months to his personal affairs. It has been suggested that he may be offered the chairmanship of the board when he is ready to again actively identify himself with the corporation.

The passing of the control of the organization was foreshadowed by a recent announcement that the du Pont Securities company had been formed to take over the Durant holdings, amounting to something like 3,000,000 shares. This is the second time in the history of General Motors that Mr. Durant has lost control.

Several years ago the du Ponts became interested in General Motors, their holdings totaling about 37 per cent. of the outstanding stock. This year J. P. Morgan & Co. became interested through the underwriting of a stock offering, and E. R. Stettinius of the Morgan company took a place on the board.

ANOTHER DUPLEX RECORD.

From Fort Worth to Wichita Falls, Tex., by truck in 6½ hours is the record which a Duplex Limited truck made on a fast test run, according to communication which has just been received by the Duplex Truck Co.

Passengers in this Duplex truck were C. M. Maxwell, manager of the Stapleton-Brown Motor Co. of Fort Worth, Tex., distributors for the Duplex line, and J. W. Minnis, Wichita Falls distributor. The test was a complete success. The roads were rough, with a long run of bad sand around Alvord, but the new Limited reached the end of the run without the least sign of overheating.

1 STATION OFFICE
1 EXECUTIVE OFFICE

Page 1

SERVICE STATION WEEKLY REPORT

NATIONAL CHAIN MOTOR SERVICE CORPORATION STATION NO. _____

TIME	Garage		Tire	Battery	Elec.	General Repair	Machine	Radiator	Sheet Metal	Mechanical Weld.	Time Clerical	TOTAL	
	Space	Mdco.										Hours	Amount
Elapsed per Payroll													
Production per Invoice													
Non-productive													

		Garage		Parts	Service
		Space	Mdco.		
Income per Invoice	Cash				
	Credit				
	Total				

		Garage		Parts	Service
		Space	Mdco.		
Expense { Wages Invoice	Cash				
	Credit				
	Total				

REMARKS _____

MANAGER _____

This Service Station Weekly Report Records the Financial Transactions of the Organization in a Nut Shell.

Cooperation 1921 Watchword

To all in the automotive industry MOTOR TRUCK extends its best wishes for a Merry Christmas and a happy and prosperous 1921.

Dec. 31, 1920, crowns the most useful and progressive year in the life of MOTOR TRUCK. In the 12 months its activities have broadened, its clientele increased and its capacity intensified. The arrow points unerringly to augmented horsepower for its work in the new year. All that it has to offer and all that it may have in the coming days is here unqualifiedly dedicated to the advancement of the common cause. MOTOR TRUCK pledges itself to give to the industry its utmost in cooperation and service.

The prosperous year we wish for all is founded not only on hope, but on belief. An institution so firmly imbedded on solid ground as the truck business cannot be held back by temporary handicaps. Economists agree that inadequate transportation facilities are the main drawback to an efficient and economical distribution of American products. The truck industry has the remedy. The people want it. Only the getting together is needed to make the demand top the supply.

The truck is a utility, tried, tested and proven. It has made its place in American life. It is here to stay. Its units must multiply by tens of thousands to do the work for which it was designed and for which it is so well fitted that its efficacy is now doubted by none.

The momentary setback brought about by the necessary post-war readjustment will build a more potent industry than before. There will be a weeding out and a thinning down of waste, human and otherwise. The manufacturer who is operating on a soap bubble and building a truck for a day will disappear. The dealer who knows nothing of the distributing profession will sink back to the nothingness from which he came.

There will be new codes of ethics, new principles of business, new methods of efficiency, the laborer will become worthy of his hire, the manufacturer will surround himself with new safeguards in men and money, there will be additional factory branches, making for a more direct contact point between the manufacturer and his selling agent, the export market will be further exploited and developed.

There will be more efficient management and improved methods of production, the dealer will learn again the lost art of selling and the salesman will be better geared for future action through the lubricating process he has undergone in running down business off the beaten path.

The new order of things will go into operation while the year is yet young. Its coming can be hurried by vision and action on the part of those who direct the destinies of this basic American industry. A pulling together ensures quick and safe delivery of the sold assets readjustment will bring.



TRAILERS ADD TO TRUCK ECONOMY

LAPEER SEMI-TRAILER SYSTEM CLAIMED BIG MONEY SAVER

The Lapeer semi-trailer is constructed for use with a truck or tractor, the back part of the power vehicle furnishing the front perch of the tractor. While loading or unloading the trailer can be uncoupled from the tractor, the front end being supported by two small wheels, which are hoisted up against the floor while the machine is running.

With this patent device one truck can handle several trailers, depending on the number of men loading the empty ones, and several of the many purchasers are using as many as four of the trailers with one truck.

Large lumber dealers have found it particularly fitted for their work, and the American Railway Express Co. uses eight of them at its Chicago yard.

The coupling device is unique, in that it can be attached or detached in less than one minute, thus allowing the truck to be always on the move, no time being lost in loading or unloading.

Conservative figures shown by large users put the saving gained by using the system, in comparison with using a truck solely, at about 60 per cent., and several instances are noted where one three-ton truck with three Lapeers has loaded and delivered close to 200 tons of freight a day, most of which was hauled for some distance on crowded city streets, with traffic conditions, especially during the noon rush hour, anything but ideal for work of this nature.

The Columbia Terminals Co., St. Louis, is standardizing on nine-ton Lapeers for handling freight between that city and East St. Louis, and reports especially good results.

The trailers are made in three different sizes, ranging from three tons to nine tons. They are manufactured by the Lapeer Trailer Corporation, Lapeer, Mich., and M. E. Ryan, 2807 Michigan avenue, Chicago, is the sole distributor.

MECHANICAL LOADING DEVICES SPEED UP BUSINESS.

In selling motor trucks dealers will find that their general business will benefit if they impress on the buyer the advantages of rapid loading devices.

Every motor truck user must have thought at one time or another of the economies in time and money which could be brought about by the use of mechanical or electrical loading and unloading appliances, which will either enable the driver of the motor truck to do all the loading with a minimum of effort and in the quickest time, or at least reduce the size of the shipping gang.

There are appliances which will save the motor truck owner labor time and motor truck time. One device is the link belt affair which uses a small motor and is of especial utility in coal yards. Pushed up against a coal pile and with a man shoveling coal toward it, it will feed its endless chain of coal containers into the pile and load the coal truck at a rapid rate—as low as 10 minutes for an eight-yard body.

One of the simplest arrangements for rapid loading at crowded loading platforms is the saw-toothed construction, enabling the drivers to back up more motor trucks at a time in a better position than by the straight design.

HAULING LOGS BY TRAILER.

With a 3½-ton truck, used as a tractor, and a two-wheel pole trailer, E. C. Portner of Allyn, Wash., hauls an average load of 3400 feet of logs over a round trip of 4¼ miles from the forest to the mill. He goes right into the woods over dirt roads that are soft and frequently slippery. He averaged seven trips a day during a two-week period recently, through rain and shine.

George C. Murray, formerly connected with the Aluminum Castings Co., Detroit, has gone to San Francisco, where he will have charge of the sale of Fruehauf trailers on the coast.

"TRAILER FOR EVERY NEED" IS SLOGAN OF COAST MANUFACTURER

The Ralston Iron Works, Inc., 20th and Indiana streets, San Francisco, Cal., is well equipped to back its claim that "There's a Ralston trailer for every hauling need."

This company produces four models of two-wheel trailers and four models of four-wheel standard truck trailers, three models of standard semi-trailers, three of lumber type semi-trailers, four of chain-drive truck attachments, two types of heavy duty logging trailers, three models of two-wheel pipe and pole dollies, two of two-wheel special lumber dollies, two four-wheel low bed truck trailers, one four-wheel high speed trailer and also four models of automatic brake equipment, in capacities of one to four tons, with standard reversible steer.

These various products range in price from \$125 for the 1000-pound capacity two-wheel standard trailer, with semi-rack body, for passenger cars and light trucks, to \$1925 for the model U, eight-ton, heavy duty logging trailer, this including complete logging equipment.

BUNGALOW ON TRAILER.

A bungalow on wheels is the latest addition to the family of camping trailers for motorists, one of them having been recently exhibited at the International Exhibition in Grand Central Palace, New York, in the trailer section on the seventh floor. Although it weighs but 750 pounds complete and is mounted on a two-wheel trailer having pneumatic tires and anti-friction bearings, it is remarkably complete and roomy. It has a permanent sheet steel body, closely resembling a limousine, and the sides open outward to let down two woven spring beds, with mattresses, pillows and covers. There is ample room between the beds to set up a portable table, and space is also provided for a cupboard and a cooking apartment. Three or four styles of the trailer will be manufactured for use the coming season, ranging in price from \$350 to \$1200.

NEW USE FOR TRAILERS PROPOSED.

A New York state dealer in gasoline-electric lighting and power plants for farm and household lighting use proposes to use light two-wheeled trailers for demonstrating the outfits. The advantage of mounting the light unit on the trailer is that it can be left overnight at some farm house or garage, while the dealer drives his car back to town. Similar outfits mounted on light truck bodies have proved rather heavy and the trailer plan promises to meet with the approval of the trade.



One of Several Lapeer Semi-Trailers in Service of American Can Co. May Be Used with Either Truck or Tractor. As Many as Four Used with One Truck. Have Capacities of Three to Nine Tons. Big Economy Claimed for Them.

ALL RATES BASED ON RETURN LOADS BY HAULER WITH 12 TRUCKS



A Fleet of Keough Storage Co. Trucks Getting Loads Direct from One of the Cotton Mills at Fall River, Mass.

THE Keough Storage Co., with a terminal in Boston, an office at New Bedford, and headquarters, a garage and six storage warehouses at Fall River, Mass., operates its dozen trucks on a return load rate basis.

The shipper who wants a quick haul to a point where a return load is not in sight pays the rate both ways.

This concern does no long distance hauling. It hasn't time.

A call for a shipment to Detroit, Mich., at what looked like a profitable rate, was refused recently, the company finding enough work for its trucks nearer home and not caring to take any of the chances a distance haul would entail.

Cotton, cotton waste and finished cloth comprise the usual loads for the Keough trucks. The textile industry is at a low ebb right now, but the haulage equipment of this concern finds plenty to do, its low rates, due to its two-way loads, and dependable service, being two of the several reasons why this is so.

When business is astir the company has had a fleet of 20 trucks in service, eight or more being hired for a period of between three and four months. This was for the hauling of food supplies to Fall River from the U. S. army quartermaster's depot at Boston.

It is estimated that this firm can store 100,000 bales of cotton, 50,000,000 pounds, at one time. This is a big saving for the cotton mills of Fall River, who are seldom concerned about the building of store houses, as the means of caring for their surplus is right at hand. However, most of the mills in the city have their own store houses and the Keough buildings are called on to house extra supplies of cotton, cotton waste or finished cloth designed for shipment later. Considerable general merchandise is also stored in these buildings.

From six to eight Keough trucks run to Boston daily, the haul being 64 miles each way. Two or three go from New Bedford to Boston, the distance being better than 75 miles in each direction. Two usually operate between Fall River and New Bedford, making two round

trips a day. These cities are 14 miles apart. Two round trips are made to Providence, 19 miles away, by either one or two trucks every day. Sometimes the trucks for the New Bedford-Boston run are sent over in the early morning, but as a rule they are put up over night in a private garage at New Bedford.

Makes Direct Deliveries.

The trucks for Boston start leaving at 6 a. m. and it is sometimes 10 o'clock before the last gets away. One or two of the early starters are loaded the night before. Most of the cotton and cotton waste goes to brokers in Boston. Sometimes the shipments are for points just outside of Boston. In the latter case direct delivery is made. The run to Boston takes from four to five hours and the return journey the same. From one hour to three is consumed in the Bay State capital, according to whether the goods are unloaded at the terminal, taken to the consignee in the city or to a nearby point. The Boston terminal is at 49 Mercantile street.

At present the Keough Co. operates four Whites, a five-ton, a two-ton, a one-ton and a $\frac{3}{4}$ -tonner; five five-ton Packards, two four-ton Rikers and a $7\frac{1}{2}$ -ton Mack. The Keough Co. has been expanding its activities recently and

among its latest departures is the taking over of the White distribution in Fall River, as well as the handling of U. S. truck tires. Under these circumstances the company is naturally to standardize on White trucks as rapidly as possible.

Eight Trucks a Day to Boston.

About a half-dozen of the trucks running to Boston daily have their loads billed well in advance, though the company has no contracts for hauling. These trucks take up, cotton waste from the various Fall River mills to the John Lee Co., waste dealers at Boston. They bring back fruit and other perishable products from the Boston auction market to Fall River wholesalers.

Bringing up cotton, waste or cloth the other trucks either get a load at the terminal, at the docks or the freight houses. Usually the return load is for Fall River textile factories. The trucks running between Fall River and New Bedford and Fall River and Boston also do much mill hauling, though there are frequent hauls of merchandise, usually in bulk.

1000 Bales in One Shipment.

Orders for hauls of cotton or cotton waste may come in any volume. One particular haul that is well remembered



Seven Haulers of the Keough Storage Co. Lined Up in Front of One of Its Six Warehouses.

was an order to bring 1000 bales of cotton to Boston for export. Why it has not been forgotten is because it was reported to have run afoul of a submarine and never to have reached its destination in France.

This cotton was brought to Boston in truck loads of 23 bales, or $6\frac{1}{4}$ tons each, the entire consignment being therefore carried in 40 loads. A fair amount of the cotton conveyed to Boston is for export.

The 12 Keough trucks are housed in a brick garage, 150x100, near one of its large storehouses on Davoll street. This garage has a capacity of 50 trucks and the concern hopes some day to occupy it all with its own trucks. Part of the garage is now being used for storage. This garage is also a truck terminal. It has a loading platform, a trifle higher than a truck body. Merchandise is pushed from the platform to the truck.

Hoists and Overhead Trolley.

In each storehouse are whip hoists and also an overhead trolley arrangement. If cotton or waste stored at an end of the building distant from one of the doors is ordered for shipment a chain fall picks up the bales and the trolley, which works by pulley, carries it along to the door from where a whip hoist deposits it on the truck.

The Keough Co., which has been in business 20 years, bought its first truck five years ago. Gradually the fleet has been enlarged, four having been bought since the early part of last summer. About the time the first truck was secured the company had 30 horses. Since trucks have been used its hauling business has multiplied many times. The Boston hauls were inaugurated three years ago. At the present time five horses are still employed. These are attached to low gears and used for local hauls.

The company believes that there is economy in this number of horses. The reason for this is that the loading time for hauls between mills and store house and between freight house and store house, which is but a brief distance, is so long and the runs so short that trucks are too valuable to be used in this service. Figures prove that a truck can run to Providence or New Bedford and, sometimes to Boston, while one of these hauls is made between nearby points in Fall River.

The Keough company keeps cost records, which show around five miles for a gallon of gasoline by the average heavy duty truck. On each hauling job three duplicate slips are used, one going to the main office and one to the shipper, while the driver keeps the third. These slips keep the company in touch with all operations and drivers handle no money.

B. F. TOBIN DEAD.

B. F. Tobin, organizer and chairman of the board of directors of the Continental Motors Corporation, and until last January president of the company, died recently from acute indigestion. He was widely known in Detroit automotive circles.

FLAT SALARY FOR SALESMEN URGED

Salary or commission, which? Truck distributors and dealers are wrestling with this problem as it affects their salesman.

The trend is toward salaries.

This seems to be the logical solution.

A dissatisfied salesman cannot sell trucks, nor any other commodity. Content and confidence are two weighty attributes of the successful salesman.

Truck salesmen on commission who find that their sales have dropped off while readjustment goes on are not satisfied. In fact, they cannot afford to go along on that basis during a period of depression. Their living expenses must be met, be times good or bad. Not only will their attitude be reflected in their work at the expense of possible sales, but many will turn to other lines in the hope of bettering themselves. Good salesmen are scarce. The dealer who has any of this brand skids badly in letting them get away.

The distributor who has had men on salary and shifts them to a commission basis hits his business a blow right in the midriff. If the dealer shows lack of confidence it is all up with his men. They cannot be blamed for getting the "I can't sell" germ.

Respectable salaries will get and hold respectable salesmen. One good salesman is worth a king row of the other type. The sale of an extra truck or two bridges the differences between the outlay for a huckster salesman and the living wage which will attract and keep the high-grade article.

Salary means that the salesman is working for the dealer and not for himself. When he gets a weekly stipend, rain or shine, he is not centering all his effort on an immediate sale to bag the ready cash at the cost of future business. He will see a wider field of prospects and build business which can be harvested later.

The salary plan may be a bit of a gamble for the dealer, but it's a winning play when he uses judgment in picking his men. The salesman who does not get business is a liability, whether on salary or commission.

CONTINENTAL'S BEST YEAR.

Continental Motors Corporation has cut its common stock dividend from two per cent. to one per cent. quarterly, and stockholders have been notified that financial statement being prepared will show that the fiscal year which ended Oct. 31 was the best in the company's history.

WINTER CARE OF TRUCKS.

The Federal Motor Truck Co., Detroit, Mich., in Federal Traffic News for November suggests to Federal owners the following rules for care of their machines during the winter months:

(a) Drain the radiator and refill with a suitable anti-freeze solution. We recommend a solution of alcohol and water in proportions as follows:

Denatured Alcohol (% by volume)	Water (% by volume)	Freezing Tem. (Deg. F.)
25%	75%	1°
35%	65%	15°
50%	50%	30°

(b) All water pump and hose connections must be inspected to insure against any leaks. If any leaks appear, correct at once to prevent any loss of the anti-freeze solution.

(c) Do not use water in the cooling system during freezing weather. Water will freeze even though the motor be run continuously.

Whenever possible your truck should be kept in a heated garage. When this is not done, great care should be used to see that all oils and greases are not so thick that they will not properly lubricate the parts intended. Many oils and greases, if left over night in a freezing temperature, become so thick that they are nothing more than paste.

A motor started up in cold should be permitted to warm up before the truck is operated.

A portion of the radiator should be kept covered to permit the water getting sufficiently warm to insure economical operation, the amount covered depending upon the temperature.

STRANAHAN HEADS A. E. A.

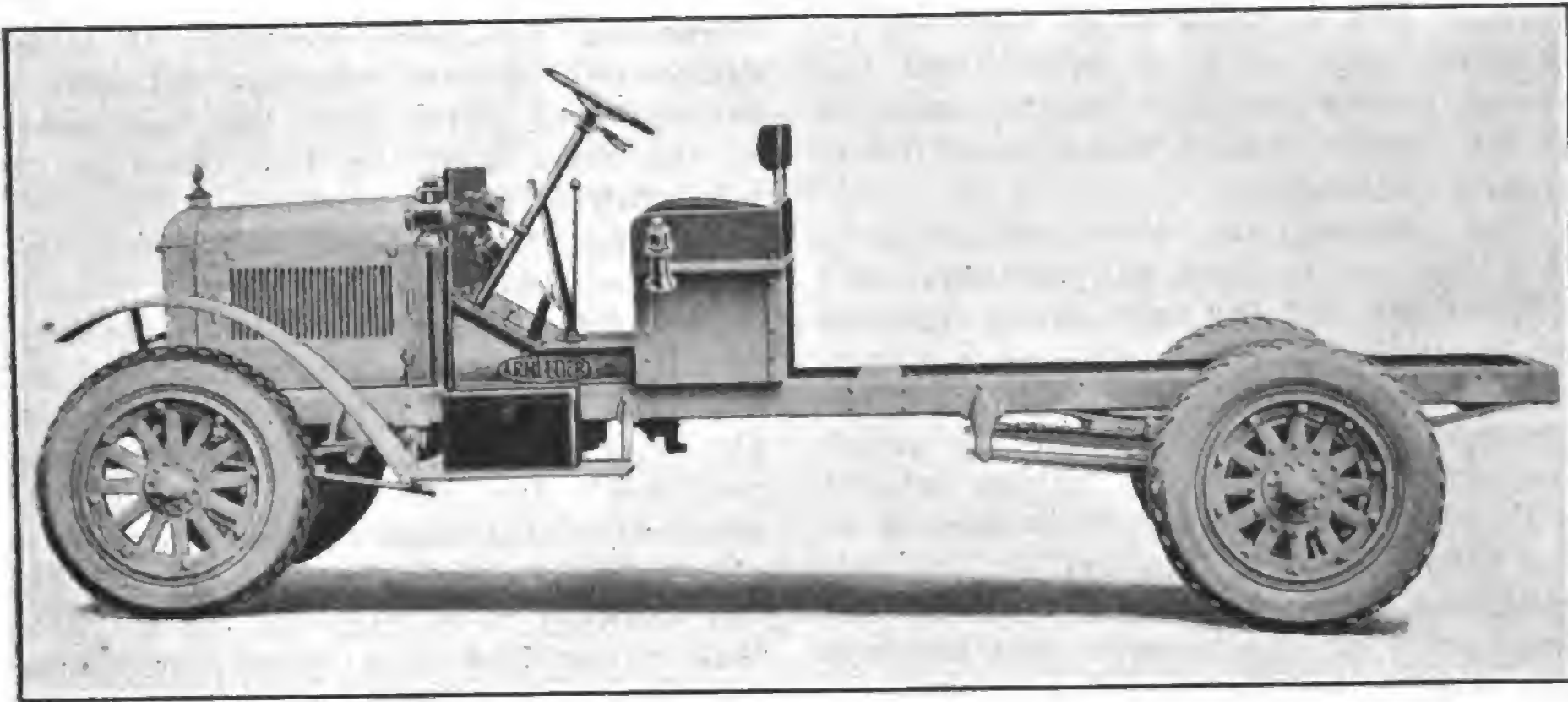
At the recent convention of the Automotive association at Chicago, Robert A. Stranahan, president of the Champion Spark Plug Co., was elected president, the first to serve from the ranks of the manufacturers, and Howard M. Dine of Dine-De Wees Co., Canton, O., jobber, named vice president.

Attendance at the convention ran between 600 and 700, and the great floor of the annex at which the sessions were held was thronged daily by a large group of members. The summer meeting will be held at Mackinac Island, Lake Michigan, July 4-9, and the 1921 convention and exhibit at the Coliseum, Chicago, Nov. 14-19.

REFRIGERATOR TRUCKS.

Sales and manufacturing of the A. B. C. transfer refrigerating system, as applied to refrigerator trucks, has been taken over by the Anheuser-Busch Sales Corporation, St. Louis, which has opened a sales office in Chicago according to recent information. The A. B. C. Refrigerator Co., Chicago, will still continue the manufacture and sale of the system to railways and steamships.

ARMLEDER ONE-TON FARM TRUCK



Armleder One-Ton Truck Chassis, Showing the Parallelism of the Radius Rods and the Driving Shaft, Both Nearly Straight Line Under Load.

WHILE conforming to conventional engineering the design of the one-ton truck chassis just perfected by the O. Armleder Co., Cincinnati, O., and now in production, is claimed to be exceptionally well developed and to have qualities that recommend it to those who require a machine for fast delivery. The chassis has been driven at 37½ miles an hour in tests and claim is made that it had practically touring car comfort, this due to the Armleder patented spring suspension, which is a feature of the design.

The machine was intended to meet the requirements of those engaged in rapid transportation of light loads, and statement is that it is especially adapted for farm service. Much care has been directed to obtaining simplification and accessibility, and to minimizing the labor incidental to adjustment and maintenance. The truck, while comparatively light, is claimed by the Armleder engineer to have unusually larger factors of safety, and many of the fittings are as large as those used in the 2½-ton chassis.

Large Power for Truck Capacity.

Note of the construction detail evidences the care that has been directed to perfecting the design, and this holds true of practically every unit. The engine is constructed to Armleder specifications and it is a four-cylinder, water cooled, L-head type, with cylinder bore of 3¾ inches and stroke of 5¼ inches, that is rated at 22.50 horsepower by the S. A. E. formula, but claim is made that it will develop 30 horsepower at 1500 revolutions.

The cylinders are cast en bloc with the water jacket integral, and the head is a separate casting with liberal water chambers. The cylinders are unusual length and these are installed on a two-section cast iron crankcase, the upper section carrying the main bearings. The crankshaft is a three-journal type, heat treated and ground to size, and the camshaft is a single-piece drop forging with the cams integral. The construction of the engine block is such that the pistons can be removed by taking off the head or dropped through past the crankshaft by taking off the lower crank case sec-

tion. The connecting rods are of unusual length, which are designed to minimize side thrust on the cylinder walls.

Some Features of Engine Design.

The timing gearset is housed by an extension of the upper section of the crank case and the flywheel is enclosed in a housing. The design of the crank case is such that the timing gear housing cover can be taken off and the timing gears removed without taking the engine from the chassis or the front cross member of the frame. The lower section of the crank case containing the oil reservoir can be dropped by removing a few bolts or without dismounting the oil pump.

The engine is cooled by a circulation of water forced through the cylinder jackets by a centrifugal pump, and a radiator with cast top and bottom tanks and a finned tube cooling section that is removable. The tubes are swaged into the header plates and soldered. That leakage will result only from accidental damage is claimed for the cooling sections. The radiator is also cooled by a belt driven fan.

The lubricating system is a full pressure type, the oil being drawn from the screened well and forced through ducts cast in the crank case and drilled in the crankshaft, to the main, crankpin and camshaft bearings, the timing gearset and through tube to the wristpins. The throwoff from the crankshaft lubricates the cylinders, pistons, cams and valve

tappets. The circulation of oil is indicated by a sight feed gauge on the dash. The pressure is 15 pounds to the square inch and there is a pressure relief valve to insure against damage in the event of obstruction of the system.

The Power Transmission System.

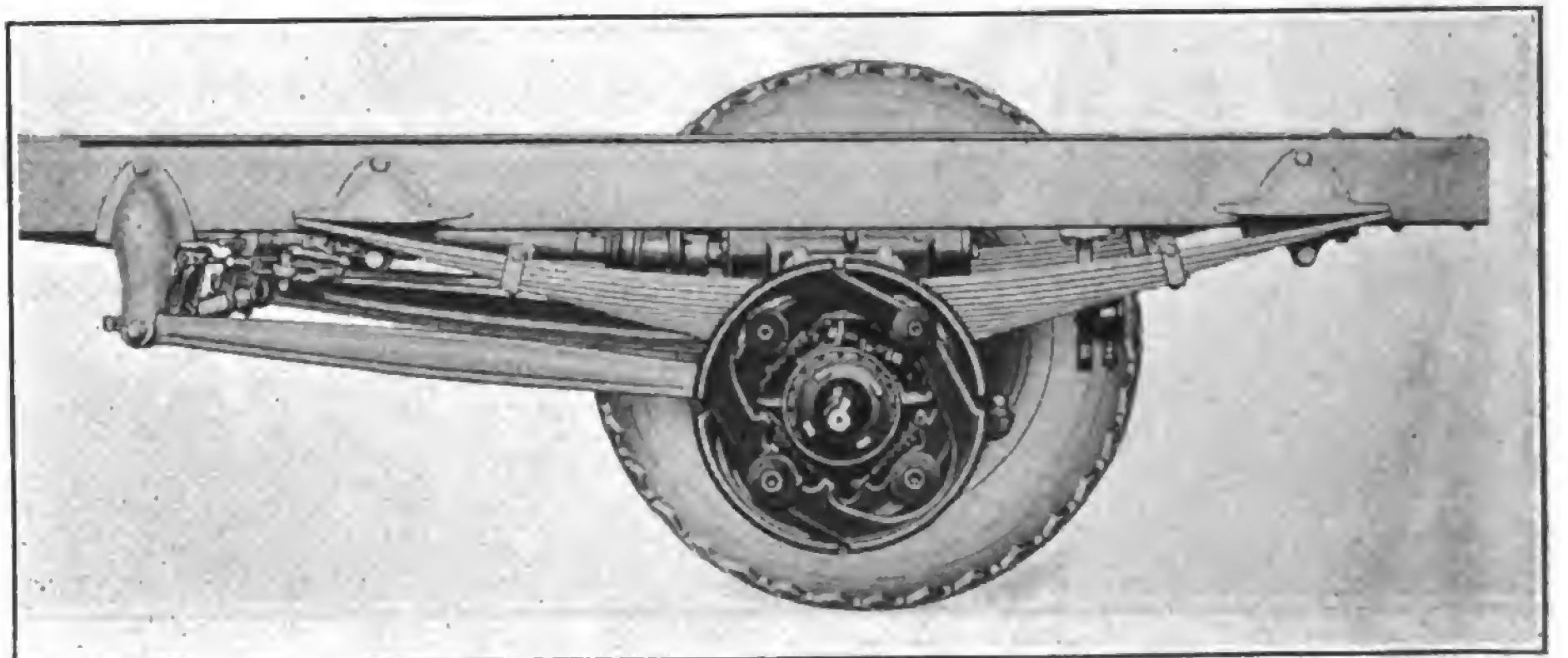
The clutch is a multiple dry disc construction with the plates faced with anti-friction fabric, and this is in a unit with the selective type sliding gear transmission gearset that is combined with the engine as a unit power plant. The gearset has three forward speed ratios and reverse. The shafts are large and the gears are wide faced. The shafts are mounted on heavy bearings. The gearset case is so constructed that a tire pump can be installed when this is desired.

The power plant is mounted at three points, forward on a trunnion and on arms integral with the crank case upper section on the frame side members. The driving shaft is two section, with three universal joints, the rear end of the forward section being carried by a heavy bearing suspended on a frame cross member. The rear section is the same length and the same angle as the radius rods, so that at all times there is complete parallelism and the greatest transmission efficiency is obtained.

Rear Axle a Full Floating Worm Type.

The shaft is coupled to the worm shaft of the rear axle, which is a full floating type, with the housing cast in a single unit, with extra size worm shaft and worm wheel. The front axle is an I section steel drop forging. These are equipped with wood artillery type wheels, the forward set having 10 spokes and the rear set 12 spokes. The wheels are shod with 34 by 3½-inch solid tires forward and 34 by five-inch solid tires rear.

The frame is a pressed steel channel section of quarter-inch stock, five inches deep, with webs 2½ inches wide, with cross members reinforced with gusset plates. This is suspended on semi-elliptic springs that are mounted in an unusual manner, which is patented. The forward ends of the front springs are pivoted, the rear ends of these springs



Armleder Patent Truck Suspension: The Spring Automatically Shortens and Stiffens Under Load and All Wearing Parts of Conventional Linkage Are Eliminated.

and both ends of the rear springs are flat and are under the bell-shape hangers, which have wide flanges at the bases, these flanges being slightly above the lower edges of the side members.

Springs Automatically Shorten Under Load.

The flanges are slightly curved and when the chassis is unloaded they rest on the ends of the springs. As the truck is loaded the springs flatten until the entire length of the flanges are upon them. This deflection automatically shortens the springs, $7\frac{1}{2}$ inches at the rear ends of the forward set and nine inches at the ends of the rear set. The rear springs are normally $63\frac{1}{2}$ inches long and as they shorten in ratio to the load they stiffen in like proportion, so that resiliency is decreased as the load is increased and the vehicle rides easily and steadily.

Claim is made by Armleder engineers that this form of suspension is far superior to any other. As the springs have

neither shackles or bolts the number of parts is minimized. In fact, statement is made that with this construction there is about 48 less parts than with shackled springs, and as there is no need for lubrication and no wear aside from the spring leaves and the bearing surfaces of the hanger flanges, the service life is greatly prolonged.

The springs are on machined pads that are set in lead and are dust and water tight, and the springs are retained by heavy U-bar clips. The spring ends being between the hanger flanges and extensions cannot be dislodged by action resulting from contact of the wheels with road obstructions. The relation of the rear axle is maintained by I section radius rods that are mounted at the forward ends in long hangers, and between the hanger ends is a tubular tie rod. Under load the radius rods parallel the frame and the driving shaft.

The steering gear is a semi-reversible screw and nut type that is located at the

left side, and the steering linkage is extremely heavy. Provision is made for compensation for wear. The control is conventional and the brakes are internal expanding, the shoes operating in large drums on the rear wheels. All brakes are operated either with the foot pedal or the hand lever, so that there is always full efficiency no matter what the need, and should a pull rod break the brakes would still be operative.

The chassis is sold with driver's seat, dash, fenders and running boards, oil dash and tail lamps, horn, jack and tool kit. Every desirable auxiliary has been provided. The carburetor has hot air connection and dash control. It is supplied with fuel from a 20-gallon tank. The ignition is by high-tension magneto that is enclosed in a special aluminum case. The wheelbase is 148 inches and on this chassis a body from 108 to 126 inches can be installed, this affording a loading space of from 96 to 108 inches length.

Truck is Home, Office and Auto

H. G. Dustman, southeastern sales representative of the Stoughton Wagon Co., Stoughton, Wis., travels through eight states and he does it in style. At the same time he has no worry over hotel accommodations or rates, nor does he have to hire a stenographer in every town. Mrs. Dustman goes with him and officiates as "steno." Mr. and Mrs. Dustman travel in a private "car." They are cozy and comfortable at all times and their only expense is for gasoline and food.

Their "home on wheels" was built according to Mr. Dustman's ideas in the truck division of the Stoughton factory. The body was a special job. It was mounted, however, on an ordinary Stoughton $1\frac{1}{2}$ -ton truck chassis. The car weighs 6450 pounds and carries a 40-

gallon gasoline tank and a 10-gallon reserve supply tank. It has a copper roof covered with oiled duck and is equipped with 35x5 tires in front and 38x7 rears.

The body is about 21 feet long and is constructed of poplar and maple. The inside dimensions are $15 \times 6\frac{1}{4}$ feet, with a six-foot four-inch ceiling. There are 11 handsome beveled glass windows, each of which has artistic, colorful draperies.

The "house" is equipped with indirect electric lights, electric fans, kitchen and dining room fixtures, a full sized bed which folds up into a divan by day, upholstered window seats that camouflage steamer trunk clothes closets and three mirrored toilet and medicine cabinets. The dining table is collapsible and fits neatly beneath the bed when not in use.

In addition to these conveniences, Mr.

Dustman carries a compact office set, including a filing cabinet and typewriter. While he drives Mrs. Dustman runs the "office," which presents a busy appearance during the day. Here he carries on all his regular correspondence and keeps in close touch with the various branch dealers and distributors in his territory. He is placing new distributors throughout the southeast.

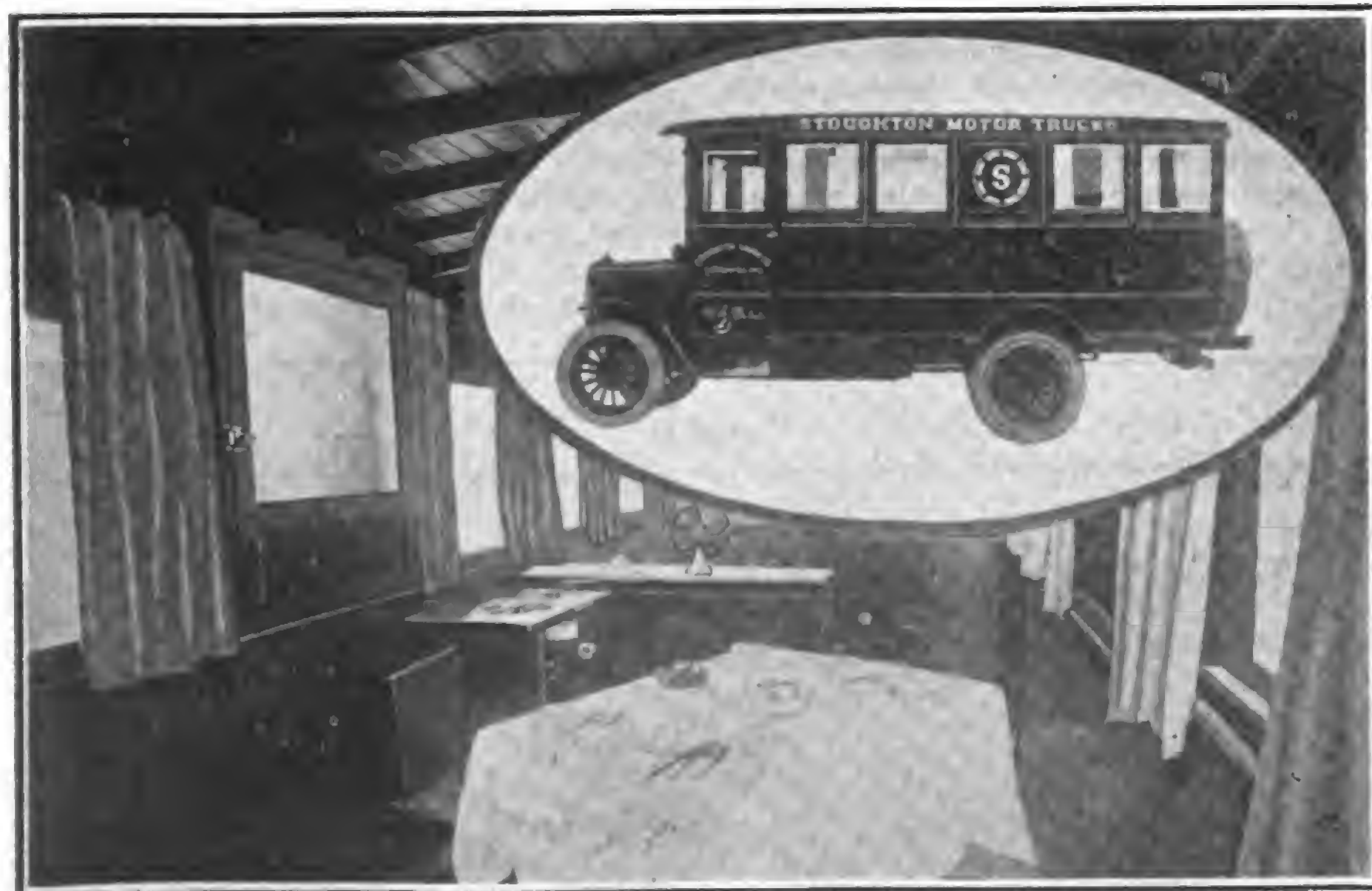
The equipage always attracts wide attention when it rolls into a town or city and results in much advertising for the Stoughton company. Frequently it results in a truck sale on the spot because Mr. Dustman is never without a demonstrator. Whether he is "at home" or "at the office" he always can exhibit his wares.

Mr. Dustman's headquarters are in Jacksonville, Fla., but the greater part of his time is spent in his wheeled home traveling through the states of North and South Carolina, Georgia, Florida, Alabama, Louisiana, Mississippi and Tennessee.

"This arrangement is much more satisfactory than traveling by rail and stopping in hotels," Mr. Dustman said. "And it is much cheaper. My only expenses are for gasoline and food. And we have barrels of fun touring in our private car. I think the pleasant driving makes me more fit for business, too."

DUPLEX IS PATHFINDER.

A Duplex limited truck was recently sent ahead as the pathfinder for the Washington, D. C., Herald Pathfinder's 15th annual tour, in which 196 miles through historic points in Virginia were covered in two days. The limited won great praise for its work. The truck showed an average of $11\frac{1}{2}$ miles to the gallon of gas and the consumption of one gallon of oil for the run.



Attractive Home and Office of the Stoughton Wagon Co.'s Southeastern Sales Representative.

SELL YOUR CITY MORE TRUCKS

(By DON LORING.)

Whether business goes by the door or comes in the window, municipalities, counties and states must function without let up. With each passing day the potentiality of this market for trucks is accelerated. City governments have found that the truck solves their haulage problems and the county and state governments can tell the same story. Officials everywhere are "sold" on the truck as a haulage utility.

If there is a city in the country that does not own one or more trucks it is ashamed to admit its backwardness in this regard. In the larger cities the horse drawn vehicle is rapidly joining the horse car on its way out of the picture. New York city has 438 trucks of its own in its 13 departments, some of them running in size up to 7½ tons, and, by the way, it is not enough.

Economy is not always the reason for the change from the horse to the power hauler. The better service is a big factor. City officials are tired hearing continual complaints from citizens regarding inadequate

watering or oiling of streets and other failures to give the taxpayer what he wants and what he pays for.

A recent roll call of municipalities by the National Automobile Chamber of Commerce shows only about 5000 trucks in city service. There are more than 100 cities in the United States with a population of over 50,000, several hundred with populations above 25,000 and more than 1,200 incorporated communities with over 5,000 souls.

A student of municipal service estimates that every city, town, yes, and village, should have a truck in public work for every 2,000 inhabitants at least. That would mean 50,000 community owned trucks in the United States and the number is not alarming. The 5,000 figure shows that the truck salesman is not keeping pace with his brother in other lines. The best feature of this proposition is that it isn't too late to load up and go after this big game.

Watering and oiling of streets is often let out on contract. Quite often the bid is so low that it does not appear that the city would save money by doing the work itself. Usually the work done is lower than the bid. Streets are neglected. The city officials have no control over the drivers of truck or wagon and frequently the contractor has no control over them either. They go about where they wish to go and about as often as their whims direct. Such service is costly at any price.

A strong selling point for the salesman is the power of the truck to do better work and make life easier for the governing body by the elimination of complaints. Taxpayers seldom begrudge the money expended in fixing streets and keeping them clear of snow in winter and free of dust in summer. The first aim of officials is to please the taxpayer. If they can be shown that they can do this by installing trucks, and usually save money at the same time, they can be entered at the top of the prospect list immediately.

How Cities Utilize Them.

Every city has its highway, water and sewer departments, where motor trucks should be at work. In many the highway department not only looks after the streets, but also cares for the removal of refuse, swill and ashes. Hauling the latter from schools and from churches, as many cities do, is a big job and no single truck can do it. The removal of refuse, now carried on systematically in most cities, is also more than a one truck task. The taking away of swill also requires considerable haulage capacity. The repairing and maintenance of streets calls for many trucks, if the work is to be rightly done. The water and sewer departments can profitably employ a number of trucks.

Most communities have their fire departments wholly or partially motorized now. This has helped awaken the city

fathers to the value of the truck in speed and efficiency. Every truck installed in city work paves the way for another. It will be a distant day, however, when all cities are completely motorized and until they are this field is open—and wide open—to the truck salesman.

There are many ways to go at the problem from the salesman's standpoint. One way for the fellow who is new and does not know the ropes, is here pointed out. The fellow who is on the inside of things usually goes to the political "boss," tells him that the city ought to have a few more trucks and "talks turkey," whatever that may mean.

It will surprise many people to know that the "boss" doesn't always have the say nowadays as he was wont to of yore. When he does the well meaning salesman is, of course, wasting his time. But we are here to say the woman voter will soon give the political grafter of every grade his quietus. When this happens motor trucks and other modern equipment for the betterment and development of community life will come into their own.

The salesman should first see the city auditor or other official who can give a lineup of the city's motor requirement. In the smaller cities the auditor cannot only do this, but he also can give the figures on all contracts entered into by the municipality in which trucks might play a part. This latter information is definitely important. These contracts often include those for watering or oiling the streets. The same official can also tell the cost of the work in which the city is utilizing horses. The auditor also knows the appropriations for each department and whether there will be enough or to spare.

Say It in Figures.

Girded with this information the salesman immediately takes his pencil and scratch pad in hand and works out a set of figures showing that the truck can do the work cheaper than horses and that

the city would make money by buying trucks to do the jobs now let out on contracts.

Then instead of wasting his time seeing the numerous officials authorized to buy for the various departments, which is usually a labor of love because salesmen friends of these individuals may already have the inside track, he can get better results by letter writing. His letter should not go to the mayor, city clerk, board of aldermen or council. It should be addressed to the committee in charge of the department in which he is interested.

For instance, if he can show any advantage in using trucks for any particular work in the highway department his letter should go to that committee and the same applies to the water committee, the sewer committee, etc. The chairman or secretary is bound to have the letter read at the next committee meeting and in this way he gets his story in the best possible form before every member.

Sell Transportation.

In his letter he should not attempt to sell a truck or trucks. His aim should be to sell transportation or haulage power. If he submits figures showing where the city can save money he is certain to get action from the committee. He naturally should not play his full hand in the letter, wording it in such a way that the committee must ask him to appear before that body in order to give the full facts. He does not mention his own truck in the letter or before the committee until some member brings up the subject, as is sure to happen.

However, the figures used necessarily apply to his own truck and he is talking it up all the time without calling it by name. If he can show the committee that that body will be earning money for the city by buying trucks the salesman who points out the path is sure to be in on the ground floor.

UNITY BETWEEN FACTORY AND DEALER

SALES MANAGERS ADVOCATE CLOSER RELATIONS WITH DEALERS

One of the most important features of the convention of the National Association of Truck Sales Managers, recently held in Detroit, was the determination to develop a plan of closer cooperation between dealers and manufacturers. The newly elected president, H. T. Boulden of the Selden Truck Corporation, was empowered to name four members to devise means for developing a plan of meeting with dealers at frequent intervals for an interchange of ideas.

Secretary of Agriculture E. T. Meredith, one of the principal speakers, strongly urged closer relationship with the farmer. He felt that the association should recognize the agricultural interests as the very foundation of the truck business, and felt that concerted action by the truck dealers in promoting the farming industry was very desirable.

W. R. Wilson, vice president of the Irving National bank, New York, spoke of relations between the truck dealer and manufacturer and the banks, and gave the sales managers information in regard to banking relations.

Other prominent speakers were Harry Moock, manager of the N. A. D. A., and A. T. Howson, engineering editor of *Railway Age*. Mr. Moock dwelt chiefly on the organization and functions of the dealers' association, and the necessity of cooperation and a better feeling between dealers and manufacturers.

A banquet followed two interesting sessions of the association, the first being devoted to business matters and election of officers for the ensuing year. H. T. Boulden of the Selden Truck Corporation was elected president to succeed J.



H. T. Boulden, President, National Association of Truck Sales Managers.

E. Tracy; E. T. Herbig of the Service Motor Truck Co., vice president, and A. E. Schaefer of Gramm-Bernstein, secretary-treasurer. Directors for one year were elected as follows: A. C. Burch, Clydesdale; W. K. Ackerman, Lewis-Hall; E. D. Hand, J. C. Wilson Truck Co.; two years, Mr. Herbig, Mr. Schaefer and Homer Hilton of Oshkosh; three years, Mr. Tracy, Mr. Boulden and W. A. Clare of Atterbury.

WANTED: TRUCKS

While industry has been sadly harrassed by readjustment conditions there are many fields which have been untouched or nearly so by the present conditions. In many or all of these truck prospects are as numerous as ever. In others plans are being made for spring which call for trucks.

The dealer or salesman will find fertile soil for their efforts among the following:

- The farmer.
- Municipalities, counties and states.
- Public utilities.
- Coal industry.
- Oil industry.
- Bottling industry.
- Lumber and construction (in the spring).
- Road building (in the spring).
- Dairy and ice cream industries.
- Logging industry.
- Iron and steel industries (in the spring).
- Mining industry.
- Omnibus transportation.
- Department stores.

HAULING OF ROAD BUILDING MATERIALS DURING FALL ADVOCATED

Road building is manufacturing. Any manufacturer will agree that he could not maintain his business on a profitable basis unless he provided materials well in advance of his production schedule. Roads are among the most essential requirements of the people at the moment, in that they are a solution of the transportation problem, and the Lakewood Engineering Co., Cleveland, O., believes that transporting road building materials during fall and winter, and storing at point of consumption until spring, thereby relieving transportation congestion and facilitating construction, will do much to develop efficiency in highway construction.

They have sent letters to bankers and business men, contractors, railroad general freight agents and chief executives, and state and county engineers and chambers of commerce, in the hope of stimulating action which would make better use of present rail equipment by relieving the "peak load" on the open top car movement and the general opinion, to judge by the answers received, tends to favor the plan advocated.

DENBY ST. LOUIS DEALER.

The Denby truck is hereafter to be handled in St. Louis by a newly formed corporation, the Boehl Motor Truck Co. This company has taken a temporary location at 3021 Olive St. Officers of company are: J. Louis Boehl, president; P. H. Fuchs, vice president, and Francis Wagner, secretary.



E. T. Herbig, Vice President, National Association of Truck Sales Managers.



A. E. Schaefer, Secretary-Treasurer, National Association of Truck Sales Managers.

TOW HOOKS AND TRAILER ATTACHMENT



Mansfield Radiator Guard with Front Bumper and Tow Hooks.

The Mansfield Steel Corporation, Detroit, Mich., has recently placed on the market a radiator guard with front bumper and tow hooks which is meeting with hearty approval. It has been tested by the Underwriters' Laboratories and has been listed as standard by them.

It is designed for use on motor trucks whose radiators do not exceed 40 inches in width and 26 inches in height; made in special sizes for each radiator, with two-inch angle iron frame, 1½ inch angle iron brace and 1½ by ¾-inch vertical center bars, and secured to truck with ½ inch bolts or ½x3 inch lag screws, so that guard is placed at least two inches in front of radiator.

The manufacturers claim that 75 per

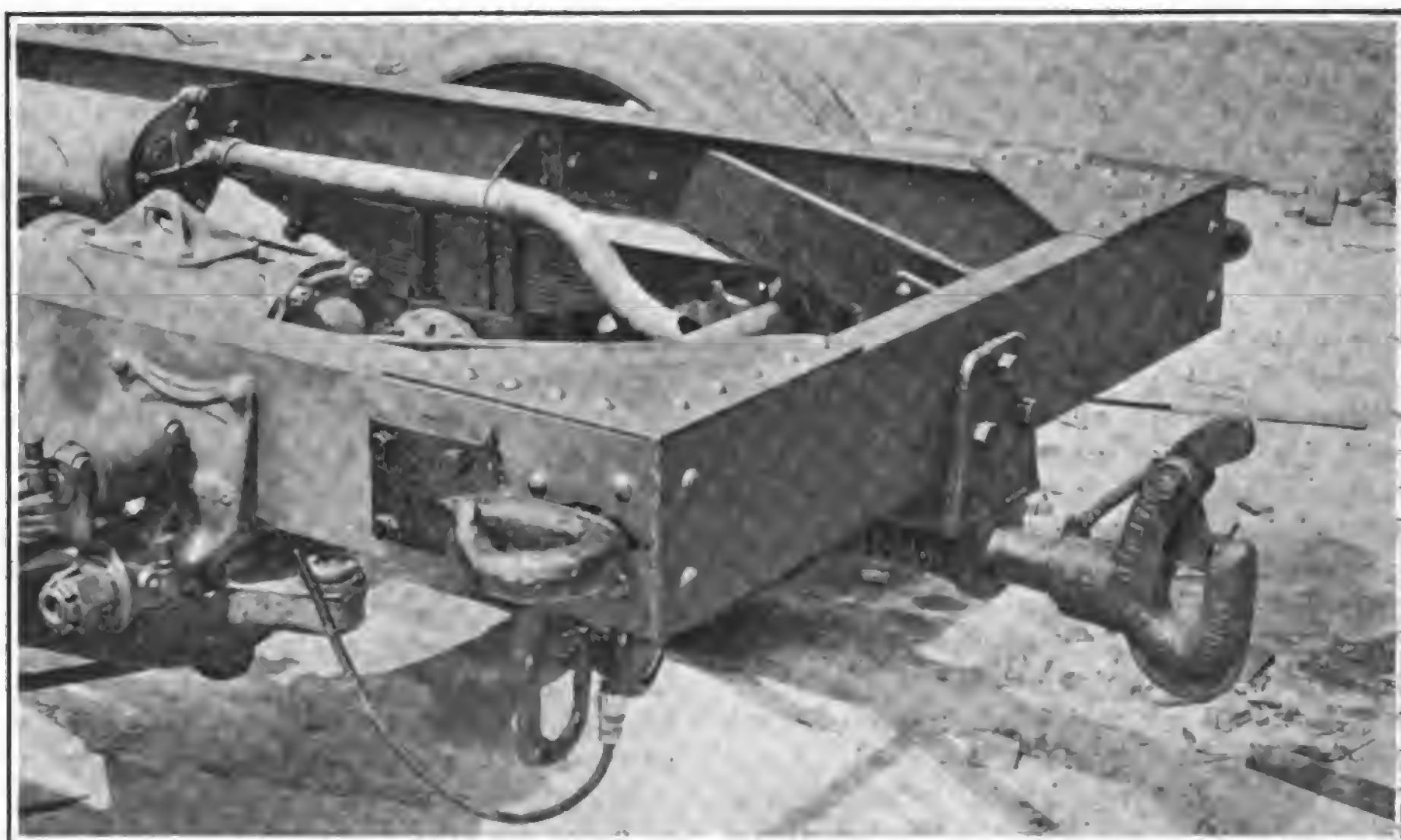
cent. of the accidents to radiators occur at railroad warehouses, loading docks and other congested places, when trucks are moving at slow speed, and that the use of radiator guards would eliminate much of this damage.

The combination front bumper and tow hooks can be applied to nearly all trucks with goose neck or curved frames at front end. The brackets are held fast to frame with "U" bolts. The tow hooks are a part of the bracket, which is made of a good grade of steel and all castings are properly annealed before leaving foundry. Four-inch rolled channel is used

for bumpers on trucks up to and including 2½ tons, and five-inch channel for heavier trucks.

This firm also manufactures the Mansfield trailer attachment and towing hooks, which is so constructed as to make it unnecessary to drill large holes in the truck frame. It is manufactured in sizes to fit different width trucks, and is so constructed that there is no strain on the rear cross member at any time.

The different products are meeting with a fine reception from the trade and the company has plans for an extensive distribution.



Mansfield Trailer Attachment and Towing Hooks. Will Fit Trucks of Different Widths.

Reeves of N. A. C. C. Sees Start of Upward Turn in Truck Business

Alfred Reeves, general manager of the National Automobile Chamber of Commerce, in addressing the Automotive Equipment Association at Chicago the middle of the month, declared that the upward trend in the automobile and truck business has begun after two months of depression.

"Along with other industries we have had poor sales for two months, but the automobile business is now moving upward," Mr Reeves said. "Present production is not averaging more than 50 per cent., except in the case of three or four factories. The full year, however, will exceed all records, approaching 1,900,000 cars and 340,000 trucks. Car renewals are about 1,000,000 a year.

"It was logical and healthful that a business which increased 350 per cent. in five years should have a readjustment, along with other industries."

GARY GETS ALBERTY.

Frederick Alberty, formerly mechanical supervisor for Master Trucks, Inc., Chicago, has taken a position as mechanical supervisor and chief inspector of the Gary Motor Truck Co., Gary, Ind.

FEDERAL PLANT BUSY.

The Federal Motor Truck Co., Detroit, is running on a full time schedule and has sufficient orders on its books to warrant continued operation.

Preparations for an even greater output during the coming year are being made. A new addition to the plant, adding 60,000 square feet to the previous 300,000 square feet, has just been completed. This building will house the final assembly and paint departments.

\$30,000,000 FOR GMC.

Final payment is scheduled to be made to the General Motors Corporation on Dec. 1 for the \$36,000,000 stock which was purchased by Canadian and British interests a few months ago. 10 per cent. of which amount has already been paid in. The amount to be received on that date, understood to be in the neighborhood of between \$30,000,000 and \$32,000,000, will substantially strengthen the cash resources of General Motors.

DEVLIN WITH DUPLEX.

S. F. Devlin, formerly engineer for the Olds Motor Works, Lansing, Mich., has accepted a position with the Duplex Truck Co. of the same city.

Kearns-Dughie Motor Corp. Planning to Invade Domestic Market

The Kearns-Dughie Motor Corp., successors to the Kearns Motor Car Co., has removed its factory at Beavertown, Pa., to its new and larger plant at Danville, Pa., and is now appointing dealers under its program of invading the domestic market. The company was organized 18 months ago and has been engaged exclusively in foreign trade.

In order to carry out its latest project a refinancing and reorganization plan has been perfected. The 1921 production schedule calls for an output of 100 of each of its three models of the Kearns truck. Inquiries from dealers will be welcomed.

MAINE-NEW HAMPSHIRE BRIDGE BEING BUILT.

Work on the Interstate Memorial Bridge across the Piscataqua river, which will connect Maine and New Hampshire, between Kittery and Portsmouth, is going forward with a large crew of engineers, contractors and workmen. The bridge when finished will be one of the best of its kind in the New England states.

Tell Your Congressman Where You Stand on New Tax

The trucking industry must do its part to ward off the proposed additional taxes against the motor world proposed by Secretary of the Treasury Houston. These new taxes are:

Federal license tax of 50 cents a horsepower on motor cars.	\$100,000,000
Tax of two cents a gallon on gasoline	90,000,000
Additional sales tax on automobiles, motorcycles and accessories	100,000,000
Total.....	\$290,000,000

The truck manufacturer and owner does not get off lightly in this threatened deal, which would double the taxes now paid by the industry. The man behind the motor vehicle is willing to bear his end of the burden of the war, but is not ready to pay his neighbor's share. Industries of similar importance have been overlooked in both the present and proposed taxation schedules. When the other fellow is called on the auto man will dig as deep as any. The state, as well as the nation, seems to have its gun loaded for the motor fraternity.

The passage of the contemplated tax would be a body blow to the industry. With conditions as they are it would be mighty near a finishing punch. It must not be put over while any person identified with the automotive field has a voice left. There should be a surging of interests against the proposition which will drive it from any measure in

which it may be incorporated. Not an individual concerned should fail to enlist in this fight

Half Billion Dollar Tax.

This additional tax would put the total assessment against the industry at more than a half billion dollars, the exact figures being about \$550,000,000. There is now being paid to the government \$143,000,000, to the states \$64,000,000, and in personal property taxes and other fees \$55,000,000.

The present taxes are: Trucks and installed tires, 3 per cent.; automobiles and motorcycles, 5 per cent.; tires sold to other than manufacturer or producer, 5 per cent.; accessories and parts, 5 per cent.

In 1919 there were produced 1,657,652 cars and 316,364 trucks, valued at \$1,885,112,546, with accessories and parts amounting to \$621,722,048. The number of tires produced was 33,000,000. Tire renewals reached \$660,000,000, making the total value of production \$3,166,834,595, considerable of a business to gain the discrimination of the government it serves.

The production for 1920 is estimated at 1,900,000 cars and 340,000 trucks. The registration for last year was 7,558,848, cars and trucks.

In 1919 a total of 2,593,725,000 gallons of gasoline were consumed in the United States. Government officials must figure

that this amount will be 4,500,000,000 gallons the next year, judging by its estimated return of \$90,000,000 from this tax. The sales tax does not affect trucks.

While the additional cost of gasoline will fall heavily on the truck manufacturer and owner, the levy which hits him directly and hardest is the federal license tax on horsepower. Giving the average truck 25 horsepower this would mean \$12.50 per truck, or \$12,500,000 for the million trucks now operating. That the government figures on this basis is shown by its estimated revenue of \$100,000,000 from this source, the ratio of trucks to cars being about one to seven.

Every senator and congressman should be at once flooded with protests against this exorbitant and unnecessary tax. That it is unnecessary was the conclusion of the National Industrial Conference Board at its recent session. It was agreed by that body that proper government economies would do away with the necessity for further taxation. If the man who makes, owns or intends to own a truck does not want to pay his good money to make up for reckless expenditures at Washington he should add his cry to those who are going to make a hearty howl over this proceeding. Above all have your name at the bottom of a letter of protest to your senator and congressman.

UNCORKED BOTTLE OF INK IN DESK ON 200 MILE TRUCK TRIP; NONE SPILLS

The Transport Truck Co., Mt. Pleasant, Mich., comes to bat with the most powerful argument in behalf of moving furniture by motor truck that has yet

seen the light. F. L. Edman, advertising manager, tells it in the November issue of "Transport Headlight" and he tells with one hand on his heart and the other on the Bible. Moreover, there are witnesses galore to back up his statement.

The meat of the tale is that a Model 50 A Transport truck in hauling a load of furniture 200 miles from Lansing to

Manistee, Mich., brought along an uncorked bottle of ink which reposed in a desk throughout the trip and not a drop of ink was spilled, although the bottle was almost full.

In support of this statement a picture of the truck was shown, as here reproduced. The Hughes Moving Co., owner of the vehicle, verifies the facts as given.

The owner found after the truck was loaded that he had forgotten an important letter. He opened the desk, dashed off the communication and then walked off without corking the bottle.

The owner feared that some of his property would be ruined after he had remembered what he had forgotten. He opened the desk at his new home before his wife would learn of his carelessness, to find that not a single drop had even splashed out of the bottle. About 60 miles of the trip was over the roughest kind of roads, but one truck being met on one stretch of 40 miles. The truck started on its 400-mile round trip Monday and was back in the home garage Thursday.

If any person in the trucking industry can cite an instance more aptly proving the efficiency of the motor truck in hauling furniture, indicating the absence of any possibility of scratching or mutilating same, MOTOR TRUCK eagerly awaits it.



Here's the Transport Truck Which Hauled Uncorked Bottle of Ink 200 Miles and Spilled Nary a Drop.

THE 1921 STOUGHTON 3-TON MODEL

The 1921 Stoughton three-ton model is rated as a powerful truck, with its Hercules MU2 motor its seven-inch pressed steel frame and a Sheldon worm drive rear axle. Transmission is four speed, model 50 Brown-Lipe. This gives an exceedingly flexible and powerful layout.

The regular equipment is with 36x5 inch front and 36x5 inch dual rear solid tires. These are also equipped with pneumatic tires at extra cost. The Stoughton Wagon Co., Stoughton, Wis., manufacturer of this truck, has found the pneumatics extremely popular even on a three-ton truck. A number of its three-ton dump trucks are shod with pneumatics and have worked on rainy days when slippery conditions prevented trucks not equipped in this wise from going into action. The mileage of these pneumatics and their freedom from trouble have been exceptional.

The specifications of the three-ton Stoughton follow:

Capacity—6000 pounds normal net load, 7200 pounds gross load including body.

Motor—Number of cylinders, four; number of cycles, four; cylinders cast en bloc; bore, 4¼; stroke, 5½; removable head; three point suspension.

Lubrication—Positive gear driven pump. Oil is pumped by a geared pump from the oil reservoir located in crank case forcing the oil independently to each bearing. Perfect lubrication independent of angle of engine.

Valves—Split washer taper type case high opening valves.

Maximum motor speed—1300 revolutions per minute governor controlled.

Carburetor—Stromberg model M2.

Ignition—Eisemann high tension water proof with impulse starter.

Cooling system—The cooling water is circulated through the water jackets and radiator by a positively driven centrifugal pump. The connection between the radiator and motor is of flexible hose to allow for distortion and misalignment.

Radiator—Fin and tube type of our own design, removable tanks and special oval tubes which lessen the danger from freezing. Special spring mounted and supplied with steel guard.

Steering gear—Semi-irreversible type placed on left hand side.

Control—Hand lever under steering wheel, also accelerator pedal.

Clutch—Transmission. Unit type multiple disc enclosed in bell housing. Brown-Lipe transmission selective sliding gear type casing bolted to motor crank case, forming a unit power plant. Four speeds forward one reverse.

Gear reduction in transmission—On low, four to one; on second, 2.62 to one; on third, 1.50 to one; on fourth, one to one; on reverse, 4.85 to 1.

Drive—Four universal joints connected by tubular shafts and supported by a double Timken roller amidship bearing, eliminating possibilities of whip.

Worm drive axle—Sheldon, weight of axle carried on one piece heavy cast

steel housing. Worm; worm wheel and differential mounted on high grade annular ball bearing and may be removed as a unit from the housing without removing the axle from under the truck. Gear reduction in rear axle 8.75 to one.

Front axle—Sheldon design. Axle center of one piece I beam section. Roller bearing.

Radius rods—The driving thrust between axle and frame is taken by large steel radius rods. Cylindrical bronze bushed connections allow for misalignment of the frame.

Brakes—Both brakes internal expanding with equalizers. Large diameter drums.

Springs—Both front and rear springs semi-elliptic special heat treated.

Frame—7-in. pressed steel channel 4 in. wide. A. O. Smith manufacturer.

Wheels—Standard S. A. E. artillery of well seasoned second growth hickory.

Tires—Goodyear front 36x4, rear 36x5 dual. Pneumatic (at additional cost), front 36x6, rear 42x9.

Wheelbase—155 in. standard.

Speed—16 miles per hour.

Hood—Special three-piece with ventilating top.

Equipment—Driver's seat. Two oil dash side lamps and tall lamp. Full set of small tools in kit roll. Two-ton jack, a number of special wrenches and tools. Warning signal mounted under floor. Mud guards for front wheels connected solidly with running boards.

Lighting system with either generator or generator battery type of lighting is furnished at an additional cost.

R. E. CHAMBERLAIN PROMOTED.

R. E. Chamberlain, formerly branch manager for the Garford Motor Truck Co. at Philadelphia, and for the last four years truck sales manager for the Packard Motor Car Co., has been promoted to assistant general sales manager.

SENTIMENT AGAINST CHANGE IN TIRE SIZES.

Resolutions favoring continuation of the present standard of pneumatic tire sizes and opposing the suggested new standard based on a 24-inch wheel diameter were passed at the joint meeting of automobile and truck makers and tire manufacturers under the auspices of the Society of Automotive Engineers recently held at Cleveland.

Tire makers who favored the proposed plan urged economy in production to be expected by reducing dealers' stocks many millions of dollars and factory equipment proportionately; these savings, it was stated, were bound to be reflected in reduced prices and other advantages to car users.

Presentation by car makers, engineers and National Automobile Chamber of Commerce indicated desire to further standardization in every practicable way, but pointed to the trend of design toward wheel diameters and smaller than 24-inch, the very large production used and planned for 25-inch wheels, added expense to car maker for tire equipment in some cases, disturbance of export situation and other features that seemed to make the suggestion untenable at this time.

The matter was thoroughly discussed at great length, resulting in almost unanimous opinion of those present in favor of continuing the present standard and of having any further suggestions considered by a joint committee representing all interests which could make a study of the subject as it may be effected by future developments.

TRAFFIC DISTRIBUTOR GROWS.

Messinger brothers have disposed of their garage on Main street, Jefferson City, Mo., and will build a larger one in the spring. They have retained the agency for Oakland and Stephens automobiles for Cole county and will also continue as Traffic truck distributors.



The 1921 Stoughton Three-Ton Model, for Which Exceptional Power and Flexibility Is Claimed.

Screen to Spread Ship-by-Truck Gospel at Coming Show

The greatest array of highway transportation films ever before collected for continuous showing at one exhibition will tell the ship-by-truck story to the onlookers at the Highway Transportation Show to be held Jan. 3-8 by the Motor Truck Association of America at the 12th Regiment Armory, 62nd street and Columbus avenue, and the First Field Artillery Armory, 68th street and Broadway, New York city. It is felt that the moving picture prints its lesson indelibly on the memory and has an even greater quality of stickitiveness than either the spoken or printed word.

Highway transportation, while the newest form of transport as compared with the railway and the waterway, has many important phases, both for the concerns which "ship by truck," as well as for the companies which operate the truck equipment. Yet all of these phases will be adequately covered in the films to be run during show week. There will be films for the average business man who makes use of trucks to bring in raw products or make final deliveries, as well as for the man who owns, operates and maintains the trucks.

Arrangements are being made to secure the well known film, "What's Your Hurry?"—featuring Wallace Reid, and in which the great workability and stamina of the motor truck is vividly pictured. Another of the films which will be of general interest to every specta-

tor at the show, is entitled, "The Neck of the Bottle." This is a "Ship-by-Truck" film and pictures all forms of transportation in New York city, which is the most highly motorized city in the world—having more than 71,000 motor trucks of all sizes and descriptions in use today. This film shows perhaps better than any other the many unusual haulage tasks which the motor truck is capable of performing. Many of these truck tasks are wholly unknown to the general public, and could never have been executed through the use of draft animals.

Good Roads on Screen.

Good roads are necessary for the economic development of the country, as well as for the efficient operation of motor vehicles; and this phase of highway transportation will be adequately covered in several films. These will not only treat of road widths, surfaces, foundations and sub-soil investigations, but also of the great business building advantages of proper highways to carry on the commerce of bringing in food products from the agricultural areas to the cities, and of taking finished manufactured products from the cities to the farming territories. The cause of road wear upon which legislatures in all states should base their charges for truck registration fees, will be shown graphically in a film of jumping trucks. A special feature of this film is a slow

moving section, which shows just exactly what happens to the truck tires, springs, frame, body and load, when a truck traveling at high speed hits an obstruction and rebounds on the level road. This film also points out clearly the important relation between road impact as caused by the sprung and unsprung weight of the truck.

For the Truck Operator.

There will be many films for the truck operator and maintenance superintendent. Foremost among these will be one showing the complete chassis and engine lubrication by means of animated sectional views through the different truck parts. The care, repair and adjustment of truck parts, such as engines, clutches, gearsets and different types of rear axles will also be shown. These will be of great value to the truck owner and maintenance man—in that they will depict the latest and most approved methods of repair, and thereby aid in helping to reduce truck maintenance costs.

Tires, one of the greatest single items of expense entering into the cost of truck operation, will also be included in the large moving picture program to be presented. Films showing the abuses to which pneumatic and solid tires are put, and the methods of overcoming such abuses will also be run. Foremost among these educational tire films are two entitled, "Shoeing the Horse of Progress" and "Blowout Bill's Busted Romance."

New Transport Storage Dock Nears Completion at Mt. Pleasant, Mich.

The scope of the expansion plans under way by the Transport Truck Co., Mt. Pleasant, Mich., may be gleaned from the accompanying illustration, which was taken when work on the roof of the plant's giant new storage dock was commenced. It is now nearing com-

pletion. The photograph gives an excellent view of the frame work which is supported by two rows of steel columns.

The dock is 90x240 feet and has a total floor area of 21,600 feet. It will add materially to the facilities for handling the business of the Transport Truck Co., which is reported to have been on the up grade throughout the so-called depression period.

The dock is being finished along the

highest construction standards and when ready for use will be a model storage house for finished trucks. The north end is being bricked in for storm protection. The west wall is formed by the main factory building and the south wall by the power plant. Finished Transport trucks, therefore, will be thoroughly protected from the elements from the time they are manufactured until they are loaded on freight cars for shipment. A complete switch track system will be operated on either side of the building. The place will have facilities for export crating. This latter equipment will give fresh impetus to the business this concern is rapidly building overseas.

MARTIN-PARRY BRANCHES.

The Martin-Parry Corporation, builders of truck bodies, has opened new branches in New York city and Atlanta, Ga., to aid in easier distribution to dealers. The New York branch is located at Jackson avenue and Honeywell street, Long Island city, occupying a large part of the building formerly used as the Ford assembly branch, and is in charge of E. A. McGrew. R. G. Seibert is manager of the Atlanta branch.



Picture Shows Scope of Giant New Storage Dock of Transport Truck Co., Now Nearing Completion.

SERVICE AND SENSE BUILD BUSINESS FOR DEALER IN NEW FIELD

Thomas M. Walsh

ARTHUR B. SHERMAN, who conducts the S. & F. Motor Sales Co., 41 Pleasant street, Brockton, Mass., distributor of Acme trucks in that territory, is one dealer who does not wait for business to break in his door, crowd him into a corner and demand attention.

Mr. Sherman thinks. Yes, sir, actually uses his head. Digs up schemes to get trade.

When trucks are not selling he asks himself the reason why.

What is more he always finds the answer and then he proceeds to eradicate said reason.

Mr. Sherman is one of many living proofs that the head, rightly used, is the most valuable equipment of any sales-room.

Fourteen months ago the Acme truck was unknown in Brockton and vicinity. now there are 35 Acmes running around that district. The quality of the truck and the Sherman service have combined to make 35 satisfied owners, a 100 per cent. record. Angels could do no more.

Sherman sells transportation, not trucks. Transportation means trucks and service. Trucks that are not kept up to the mark do not transport goods, neither do they transport their owner with joy.

This distributor divides his interest between sold and unsold trucks. He is as ready to give his time to the sold truck as he is in trying to turn the unsold product into cash.

When a truck is bought Mr. Sherman immediately becomes a partner of the buyer in getting the most out of the equipment. He starts the owner off with all the information and data at his command and sticks to him as personal counsel to the end. He does not wait until the owner comes to him for advice, but keeps in touch with all the Acme colony and frequently anticipates their wants.

The Brockton distributor has a service station and this convenience is for Acme owners first and others afterwards. The station has regular hours, but it stays open into the night and all night when the operator of an Acme is in trouble.

Faced Strong Competition.

Mr. Sherman did not fall into a soft spot when he undertook the distribution of Acme trucks in Brockton. This city is the center of the New England shoe industry. It had long been recognized as a field for motor haulage equipment. Consequently many agencies had already been established. Fleets had been installed in all the principal plants. Owners of trucks were committed to certain particular makes. Many thought the market had been wrung dry. Under such conditions the stunt of Mr. Sherman in

putting out nearly two score of his trucks in a trifle over a year was a mighty spiffy performance.

The Brockton Acme man does not play the old army game in running his business. He acts according to Hoyle as far as the etiquette of the trade is concerned, but he makes rules of his own when he's in the mood and follows them. He's just big enough to realize that the selling of trucks need not be carried along on any cut and dried lines.

Profited by Refusal to Sell.

Here's a case where he refused to make a sale and profited thereby:

Over in Whitman, Mass., resides E. P. Fitzgibbons. Mr. Fitzgibbons does not live. He "resides." He occupies the nicest residence in the town, ranks in the millionaire class and only once in his life threatened to depart from his guiding rule, which is, "The Best Is None Too Good."

Mr. Sherman prevented him from crossing the wires at this particular juncture, as the following shows:

The Acme distributor had a used truck of a standard grade for sale and advertised the same in a Brockton newspaper. The following afternoon he received a phone call asking him the price of this truck. He asked the identity of the questioner and the reply was "Mr. Fitzgibbons of Whitman."

"The price is \$1250, but you cannot have the truck," was the startling information handed out by Mr. Sherman.

An angry voice at the other end of the wire immediately queried, "why can't I have it?"

"Because," was the reply, "any man

who owns a Pierce-Arrow limousine, a Cadillac sedan, a Buick coupe and a Stutz roadster has no reason to have and cannot afford to own a second-hand truck."

There was a sputtering at the Whitman end of the connection for a few seconds and then a calmer voice inquired, "will you be at your place this evening at 7:30?"

Mr. Sherman said that he would.

"I'll be in to see you."

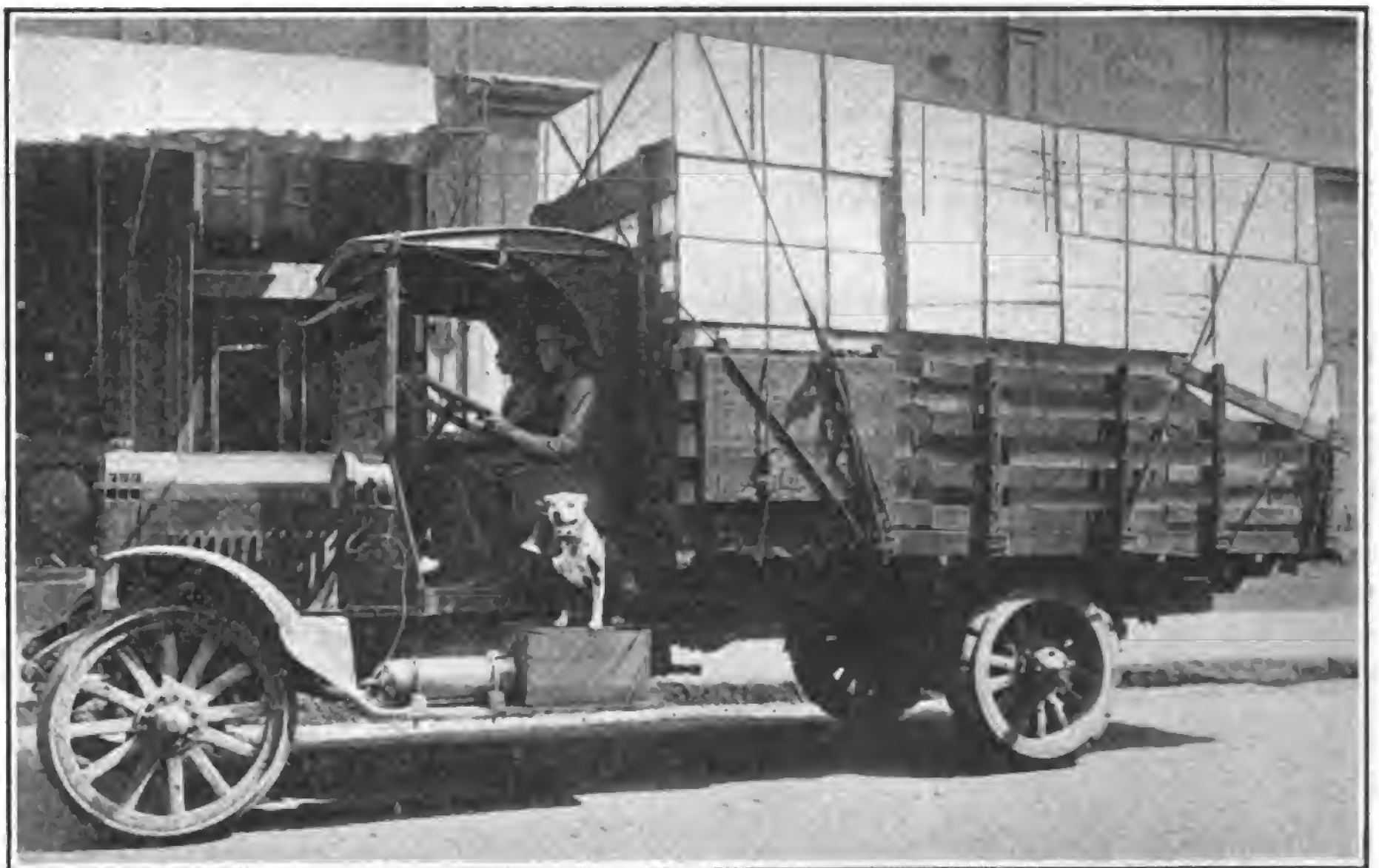
Dealer on Worry Seat.

There was considerable perturbation in the mind of a certain truck distributor at 41 Pleasant street, Brockton, the rest of the afternoon. Mr. Sherman wondered whether or not he would get out the old musket and otherwise prepare for war.

No casualties were reported after the two men met. As a matter of fact Mr. Sherman was better armed after the parting for he carried in his inside pocket a check to cover the purchase of a new two-ton Acme truck. His hardihood in speaking his thoughts out loud brought in this business.

These methods are not advocated in every instance. The dealer should have dignity and poise, however, and should make his prospect realize that he is in touch with a real business man. In this case Mr. Sherman knew what he was doing. He realized that Mr. Fitzgibbons was in the habit of having the best and also that he was the type of man who would listen to reason. Results proved the saneness of his methods.

This truck is used by E. P. Fitzgibbons & Son, leather merchants, in Whitman. It is constantly on the go, hauling



The First Acme Truck Sold in Brockton, Mass. Doing Fine Work for Brady Express Co.

leather within a radius of 15 miles to the shoe factories of the Old Colony district, which includes Brockton, Whitman, Rockland, the Weymouths, Bridgewater, Stoughton, Randolph and Middleboro. It frequently runs to Boston and back, covering 50 miles on the trip. The truck has never been inside the service station since it was purchased, even for a minor adjustment.

How Mr. Fitzgibbons Feels.

That Mr. Fitzgibbons was not offended by the straight-out methods of Mr. Sherman and that he does not regret the incident is shown by the following communication which recently arrived at the Brockton salesroom:

Whitman, Mass.
Sept. 21, 1920.

S. & F. Motor Sales Co.
41 Pleasant St.,
Brockton, Mass.

Dear Mr. Sherman—

Permit me to take this opportunity to inform you that the Acme truck which you sold us four months ago has certainly given us the greatest satisfaction from the standpoints of economy, reliability and quality.

We have used the truck under every conceivable weather and loading conditions and it has done its work well. The motor has the sound of a Pierce-Arrow touring car and the power of a five-ton truck.

If at any time we can aid you in any way in your selling campaign, we would be only too glad to have you refer your prospective customers to us.

Sincerely yours,
(Signed) E. P. FITZGIBBONS.

When the recent slump in the shoe industry and in all other lines hit the truck business Mr. Sherman refused to join the Outa-Luck club. He just advanced another speed and went out rustling for business. He used the English language by mail and over the telephone. He employed motor power and leg power to run down prospects.

Doubles Free Service.

He did one thing that has helped more than any other. Without asking backing from headquarters and entirely on his own hook he doubled the time of guaranteed free service on every truck sold. He announced that until further notice

every buyer of an Acme truck from the S. & F. Motor Sales Co. would get free service for six months. This did not mean, of course, that the owner could go out and try to knock down a building or toss a trolley car off the tracks. It meant that any mishap that might be charged against the truck for a half year would be cared for without charge at the S. & F. service station. Several recent sales have been chargeable to this one item.

Mr. Sherman recently secured a building, 60x35 feet, in the rear of his salesroom, which is rapidly being converted into a modern service station. An expert mechanic is in charge and the finest possible equipment that money can buy is being rapidly installed. This is a truck service station exclusively. All passenger car service is banned. Trucks of any make are cared for, but the Acme owner can always count on instantaneous attention and service.

First Truck Sold Going Strong.

The first Acme truck sold in Brockton by the S. & F. Motor Sales Co. was a two-tonner, which Brady's Express Co., North Montello street, depends on for its heavy hauling. The three brothers in this firm, John and George, who drive, and Jonah, who manages the concern, declare that this truck is just as dependable today as the day they got it. The only other truck used by the company is a ¾-ton Oldsmobile.

The Acme goes to Boston every day, bringing 80-pound cases of shoes by the score. Sometimes its load runs as high as four tons, but it always totals two tons or more. The shoes are consigned to jobbers or to the boats for shipment. On the way back the truck carries a load of leather or other supplies to Brockton factories. This truck never loses a day and has often worked well into the night. It is an upstanding tribute, not only to the quality of the product, but also to the Sherman service, which has been a feature of the salesmanship which is selling trucks in Brockton and its environs and keeping them sold.



Acme Truck Bought by Wealthy Whitman, Mass. Man After Dealer Had Refused to Sell Him Used Truck. Mr. Sherman in Background.

WILL HANDLE LARGE TRUCKING ACCOUNT.

It is stated that the United States Motor Truck Co. of Cincinnati, O., has placed its advertising account with the Akron Advertising Agency Co. of Akron, O. The agency will handle not only the advertising of the truck company, but will also assume complete responsibility for its merchandising plan. It is understood that advertising mediums of all kinds will be used in an extensive campaign.

NEW BETHLEHEM HOME.

The Brock Motor Co., Bethlehem distributors, St. Louis, Mo., has recently completed its new home on Olive street. The former quarters of the company, directly adjacent, will be retained for use as a storage, repair and paint shop.

TRUCK BESTS FOUR HORSES.

The Smith-Phillips Lumber Co., Winston-Salem, N. C., kept a cost record system for 3½ months of this year on the operations of its Transport 2½-ton truck, and of four horses and wagons, and found that the truck did more work better and cost less.

During the period in which the check was made the horses and wagons put the company to an expense of \$409.09, as compared to \$183.42 for the truck. Although the horses cost \$225.67 more than the truck their delivery record fell far below. The truck maintenance included gas, oil and repairs and a license fee of \$26.

The International Harvester Co. on Dec. 11 declared a stock dividend of two per cent. and its regular quarterly dividend of 1½ per cent. on common stock.

EAGLE RADIATOR PLANT.

The Eagle Motor Truck Corporation, St. Louis, Mo., has added a radiator manufacturing plant to its establishment. The new factory is located in a building at 6142 Bartmer avenue and adjoins the truck factory on the east. The radiators manufactured are used exclusively in the Eagle truck, replacing those formerly purchased from parts makers.

TO BOOST MASSACHUSETTS TRUCK FEE.

A proposed new law in Massachusetts would exact \$20 from owners of trucks of two-tons or less capacity, \$50 for those from two to three tons, \$100 for those between three and five tons and \$150 for those above five tons. At present the trucks pay \$10 a ton flat.

TRUCKS SAVE DAY FOR OIL CO.



Three New White Trucks Owned by the Skelly Oil Co., Which Went Overland 2000 Miles from Cleveland to Oklahoma and Then Continued on to the Texas Border.

If drilling was to continue unabated, so that leases could be held and production increased, casing for new wells must be had, and quickly.

Forty car loads of the material were ready for shipment at Youngstown, O., and officials of the Skeley Oil Co., drilling near Tulsa, Okla., were confronted with a serious situation.

Without working materials, idle crews must be paid, and delayed contracts considered, and all because of the freight embargo which made delivery of the casing well nigh impossible. The officials were in despair. There was no pipe available in any of the outlying districts and dealers in Oklahoma City were appealed to in vain. Their entire supply was also held up. At about this time an idea took form in the mind of one of the drillers and he stepped up to the superintendent of the drilling gang.

"Why not use those White trucks you've got coming from the Cleveland factory?" he asked, rubbing his oily hands against his greasy overalls. "What dye mean—use them?" asked the superintendent. "Have them stop over in Youngstown on the way from the factory. They can move the pipes to where the railroad can handle them," answered the other, who had figured the matter out.

And then it was that a coincidence and faith in the motor truck combined to prove an avenue of salvation; coincidence that the Skelly company should have had an order with the White Co. and faith, born of satisfactory experience, that led the work man to think of the 20 White trucks on order.

A few of the Whites, the company reasoned, would solve the problem, and the quick witted work man was highly complimented for his happy thought.

Purchasing Agent F. W. Robertson was appealed to and he at once began to "burn up the wires," so to speak, between Tulsa and Cleveland. Nor did he cease until he had arranged to commandeer the first three units of the Skelly fleet, then nearly ready to leave the factory. He then took his assistant, C. W. Short, an experienced oil field driver, and started by train for the White factory. Other drivers were hired in Cleveland and the three trucks were driven to Youngstown.

And right there the fun began. Freight cars were still unobtainable in the steel city. At Leavittsburg, however, 25 miles from Youngstown, a car or two at a time was to be had, and augmented by two hired trucks, the fleet started hauling the six and eight-inch casing from the factory to the railroad siding in the smaller city.

In a short time four cars were filled and started for Beckenridge, Tex., and an average of two cars a day were loaded and consigned to Tulsa, Wilson, Slick or Beggs, Oklahoma.

Three weeks of such work followed, during which the trucks made two round trips daily loaded with five tons, until finally the job was done. In the meantime the first cars had already reached Oklahoma and drilling had been resumed.

The casing on its way the trucks were ready to follow suit. With trailers securely boomed on as ballast the three Whites set forth on a 2000-mile roll to Oklahoma, thence to the Texas border. And exactly 14 days from that time were back in Tulsa. "Back in God's country, I'll say," said one of the trio as he descended from his machine. And his companions, saying nothing, patted hoods of Whites and thought of Cleveland, O.

The Kankakee Truck Sales Co., Louisville, Ky., has filed articles of incorporation for the sale of trucks. The firm is capitalized at \$10,000.

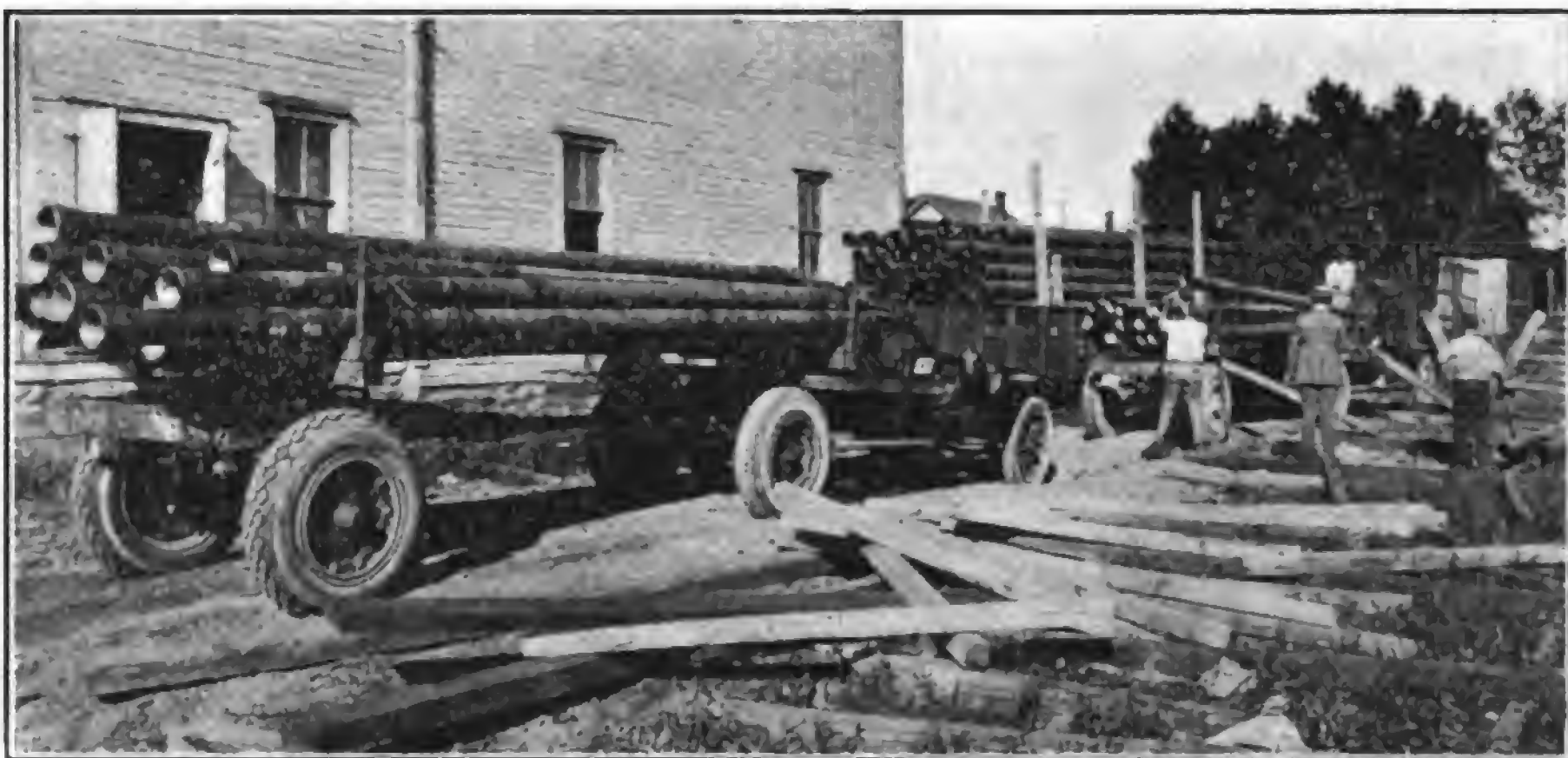
LOOKS FOR CONSTRUCTIVE HIGHWAY PROGRAM BY NEW ADMINISTRATION

Commenting on the obligations of the incoming administration in regard to a constructive highway programme, E. A. Williams, Jr., president of the Garford Motor Truck Co., Lima, O., who has been conspicuous in agitating good roads issues during the incumbency of President Wilson and the last Congress, expressed the hope that the new orders of affairs under Republican control also will include a broad, constructive policy.

Mr. Williams pointed out that figures available at the Garford general offices show that of approximately 2,000,000 miles of highways in this country, less than one-tenth are improved.

"This is a deplorable condition that should be remedied," he said. "The business of this nation depends upon its distribution facilities and the success or failure of business lies in the intelligent utilization of these facilities.

"If business is to expand it must have highway development. A nation can reap more profit from a thoroughly connected, properly constructed system of good roads than from anything else. It is imperative that we have such a system to handle the constantly increasing needs for cheap and efficient transportation of foodstuffs and finished goods.



Skelly Oil Co. White Trucks Unloading Casing for Oil Fields at Railroad Siding, Leavittsburg, O.

MASS. TRUCK CLUB GOING STRONG

The Motor Truck Club of Massachusetts, Inc., is aiming at a membership of 1000 before Jan. 1 and enthusiastic reports at the meeting held at the Boston City club on Dec. 14 pointed to a glorious triumph for the drive. The club started in October of last year with a membership of 25, had 200 in October of this year and is now at the 500 mark and going strong.

At the meeting this month the following officers were re-elected: President, James J. Scully, treasurer, Scully Co., construction engineers, Cambridge, Mass.; vice president, Cornelius F. Bowen, motor transportation, Boston, Mass.; secretary, Dwight W. Sleeper, president, Dwight W. Sleeper Co., insurance, Boston, Mass.; treasurer, W. Herbert Griffith, treasurer, Thayer-Griffith Co., dump trucking contractors, Boston, Mass.; directors, H. Arthur Hall of C. E. Hall & Sons, movers and packers, Somerville, Mass., and Herbert F. Reinhard, manager, Mills Transfer Co., trucking, Boston, Mass. The following new directors were elected: K. R. Dunton, president Doten-Dunton Deck Co., office furniture manufacturers, Cambridge, Mass.; George R. Hobbs, manufacturer of packing cases, East Boston, Mass.; L. L. Borden, proprietor, Textile Trucking Co., Fall River, Mass.

The Motor Truck Club of Massachusetts, Inc., is designed as a cooperative safety and service organization for motor truck owners. While most of the members are employing truck owners all owners are welcome, the by-law on this point reading as follows: "Any person, copartnership or corporation, represented by one person or an alternate, owning one or more motor trucks, shall be eligible to membership." No manufacturer of or dealer in trucks or accessories, or their representatives, are eligible to any of the four principal offices in the club. The entrance fee is \$5 and the yearly dues \$10, payable in advance. An incident of November tends to



Joseph F. Dineen, Former Auto Editor, Boston Record, Now Executive Secretary Motor Truck Club of Massachusetts.

show how strongly entrenched this organization is today. The club had just engaged a permanent manager, or executive secretary, in the person of Joseph F. Dineen, formerly automobile editor of the Boston Record and later a Goodrich advertising man in Boston. This decision naturally called for a special assessment.

This assessment was declared after the membership had practically doubled, largely through Mr. Dineen's efforts. There were 437 members in the club when the assessment of \$5 was called for. Almost by return mail 436 of the 437 members forwarded their checks for the amount noted.

The club gets out a bulletin monthly reporting the club activities and making announcements of interest to the members, together with a smattering of general news pertaining to the industry. Mr. Dineen is editor of this publication, which, by the way, pays for itself

through the medium of advertising matter. Already 34 club members have pledged their time and equipment to the state in the fight against snow.

A brief summary of what the club means appears in the December bulletin and is worthy of reproduction. It follows:

The Club Platform.

The Motor Truck Club of Massachusetts, Inc., is the motor truck owner's insurance that his interests are being taken care of before the Legislature, in the Public Works department, and in any department where matters pertaining to motor truck operation are taken up.

It is strictly a business club, spending every cent for the benefit of its members.

Its strength comes from its membership and increases as its membership increases and spreads. No truck owner can afford not to become a member. Do not wait until something serious happens to show you the necessity of strong, concerted action. Then it will be too late.

Members desiring to have conditions of roads, traffic regulations or restrictions brought to the attention of the proper authorities can do so by notifying the secretary.

Suggestions of methods by which the club can be of more service to truck owners will be appreciated by the officers.

Local organizations are helpful in teaming and local trucking, but a strong, state-wide organization is necessary to handle motor trucking problems. The Motor Truck Club of Massachusetts, Inc., furnishes such an organization.

The club has already won recognition before the Legislature and in other fields and is generally regarded as the official representative of the truck interests of Massachusetts.

N. Y. City Equipped to Fight Any Kind of Snow Storm.

With 300 trucks, 50 five-ton snow plows, 50 Holt caterpillar tractors and 100 Cletracs the city of New York is ready to give battle to any kind of a snow storm which may come along. The Holt tractors will be housed in fire stations and will respond to calls from the Street Cleaning department just as fire apparatus respond to alarms. The plows and trucks will be operated by members of the police and fire departments who have been chauffeurs or mechanics.

TO MAKE GMC BODIES.

The Fleet Body Co. of Owosso, Mich., has been awarded the contract for all 1921 business of the General Motor Truck Co. in bodies and cabs.

BROCKTON OWNERS ORGANIZE TO FIGHT SNOW.

Brockton, Mass., truck owners have formed an organization to keep the roads clear between Boston and Brockton. They simply refuse to have their trucks laid up this winter.

It is expected that about 50 owners will join the association and the first assessment of \$5 will be paid in at the next meeting. No definite plans have yet been announced, but the chamber of commerce, which has the direction of the affair, is understood to be formulating specific plans.

BOYD TRAFFIC SECRETARY.

The Traffic Motor Truck Corporation has appointed D. M. Boyd secretary to succeed H. P. Mammen. Mr. Boyd was formerly secretary and treasurer of Boyd-Richardson, Inc.

Railroads Get Big Revenue From Truck Industry

To build motor trucks an increasingly large amount of material must be moved by the railroads. Although the amount of freight moved during the year cannot be stated with accuracy owing to the diversified and tremendous amount of shipping to and from factories engaged in the manufacture of parts, some indication of the industry as a supporting factor of the rail lines may be had from figures given out by J. S. Marvin, general traffic manager of the Automobile Chamber of Commerce, who estimates that the annual amount of money paid for freight on finished automotive materials of all sorts, totals \$100,000,000. A large part of this amount is paid by the truck industry, and should go far to reimburse the railroads for short haul business lost to the motor truck.

ACME SPEED TRUCK OUT IN JANUARY

A NNOUNCEMENT is made by the Acme Motor Truck Co., Cadillac, Mich., that it is now producing commercially the sixth size of Acme trucks, this being rated at 1500 pounds load capacity and intended for use where fast movement is the main factor rather than volume of freight. The maximum speed that is recommended with this machine is 30 miles an hour.

The series of Acme trucks now includes 1500, 2000, 3000, 4000, 7000 and 10,000-pound chassis, and the latest production is specified as a "speed truck." Claim is made for this machine that despite its light weight (2975 pounds without body), it is in design and construction intended for truck service, and that it will endure satisfactorily wherever used. Statement is further made that the chassis is the highest development of standard practise and that wherever practical it has been perfected.

The design is practically the same as the smaller Acme trucks, differing only in dimensions of parts, and especial care has been taken to obtain accessibility and to so simplify it that maintenance with the least labor is practical. Because of the fast speed of the truck a large factor of safety is necessary and this has been obtained by skillful proportioning of parts and by perfecting methods of assembly, so that strength has not been sacrificed.

Adhering to the Acme policy of using standard construction units the chassis include Continental engines, Elsemann magnetos, Rayfield carburetors, Duplex governors, Stewart vacuum fuel feed system, G-O radiators, Borg & Beck clutches, Cotta transmission gearsets, Blood Bros.' universal joints, Timken front axles, Timken rear axles, Detroit springs, Ross steering gears and Good-year tires.

Continental Model N Engine.

The engine is a model N Red Seal, a four-cylinder, water cooled, L-head type, having cylinder bore of $3\frac{3}{4}$ inches and stroke of five inches, that is rated at 22.50 horsepower by the S. A. E. formula, which is claimed will develop 35 horsepower at block test.

The cylinders are cast en bloc with the water jacket integral, and the head is a separate casting that is retained by a series of studs. The water chambers are large and designed to insure a free circulation. The pistons are cast from the same material as the cylinders and are each fitted with three rings. The crank cases are cast in two sections, the upper having forward extensions that house the timing gearset and rear extensions that form part of the flywheel bell housing. The rear extension of the lower section completes the flywheel housing.

The upper sections of the crank cases carry the main bearings, and the lower sections form the oil reservoirs. These latter are provided with drainage plugs. The crankshaft is a three-journal type

drop forged from a special alloy steel, heat treated and ground. The camshaft is also a three-journal construction that is drop forged with the cams integral from a high grade steel, that is case hardened and ground. The connecting rods are heat treated I section steel drop forgings. The timing gearset gears are large, have wide faces and are helically cut to obtain noiseless operation.

The Engine Auxiliaries.

The engine is cooled by a thermo-syphon circulation of water through the cylinder jacket and a large cellular type G-O radiator, and by a fan mounted on an adjustable bracket that is driven by a flat belt from a pulley on the extension of the magneto shaft. The engine is lubricated by a combination force feed and splash system, the oil being drawn from the reservoir by a plunger pump and forced to the main bearings and the timing gearset, and the accumulation in the troughs in the base of the crank chamber is distributed to the cylinder and piston walls, the wristpins, cam shaft bearings, cams and valve tappets by splash of the connecting rod ends.

The engine is equipped with a Rayfield carburetor that is supplied with fuel by a Stewart vacuum system from a tank under the driver's seat. The source of ignition current is an Elsemann high-tension magneto. The engine is mounted in the chassis on a forward trunnion on a cross member and on arms integral with the bell housing of the flywheel on the side members of the frame.

The Power Transmission System.

The engine is combined with a Borg & Beck dry plate clutch and a Cotta transmission gearset into a unit power plant. The clutch is self-compensating for wear and requires no lubrication, and the gearset is a selective sliding gear type that has three forward speed ratios and reverse. The shaft is a large tube with a universal joint at either end that is coupled to the worm shaft of a Timken semi-floating rear axle. The worm shaft and the differential gearset and the axle shafts are mounted on Timken roller bearings. The axle is lubricated by splash of the worm wheel in the central bowl. The forward axle is a Timken drop forged I section of special al-

loy steel, that is heat treated, and this is fitted with Timken roller bearings.

The frame is a semi-flexible construction of pressed steel channel section $4\frac{1}{2}$ inches deep with wide webs, well reinforced and gusseted. This is suspended on semi-elliptic springs, the front set 38 inches long and $2\frac{1}{4}$ inches wide and the rear set 52 inches long and $2\frac{1}{2}$ inches wide. The top leaves of the rear springs are a special alloy steel, intended to endure the driving and braking stresses. The spring eyes are bronze bushed and the bolts are large, heat treated and ground.

The General Chassis Equipment.

The wheels are steel discs and they are shod with 34 by five-inch pneumatic tires. The steering column is located at the left side and the control is to standard practise. The brakes both operate on large drums on the rear wheels, the service set being external contracting and the emergency set internal expanding.

The wheelbase is 120 inches and the chassis overall length is 194 inches, the loading space being 120 inches long. The turning radius is 28 feet. The chassis is fitted with the same radiator, hood, cowl and the seat is the same as those of the 2000-pound chassis, and it may be fitted with the same size windshield and cab.

The standard equipment includes driver's seat, electric generator and electric tail and head lamps, fenders, running boards, horn, jack, tool box, tool kit, tire repair outfit and one spare rim. The chassis will be sold for \$1790 f. o. b. factory. There will be available for quick delivery with this chassis three types of bodies, either open express, express body with canopy top, or stake platform. The inside dimensions of the express body is 106 inches length and 43 inches width. This body is so constructed that a canopy top can be added at any time when desired.

Orders are now being accepted for January delivery on production that will be begun Jan. 1.

MAINE TO BAN BIG TRUCKS.

The State of Maine is planning to keep trucks of greater than six-ton capacity off the highways and also intends to exact a much higher fee from heavy trucks.



The Sixth Size of Acme Trucks—Rated at 1500 Pounds—Speed of 30 Miles an Hour.

Rhode Island Truck Market Survey Shows Need of Cooperation of Manufacturer and Dealer

BUSINESS CAN BE DEVELOPED BY SALES POLICIES THAT WILL INSURE AGENCIES FULL PROFITS AND OBVIATE THE BURDEN OF TIME SALES AND EXCHANGES THAT INVOLVE WORKING CAPITAL AND LIMIT OPERATIONS.

(By CLEVELAND GRAY.)

IN RHODE ISLAND, the most thickly settled state in the Union, registrations have increased 102 per cent. and general truck traffic on state highways has gained approximately 550 per cent. in five years. There are 8500 commercial vehicles operating at the present time, 1400 of which were registered during the last 11 months. It seems conservative to forecast future sales by this ratio, and men in close touch with the situation estimate that 7000 additional trucks will be absorbed within the next five years.

The diversified manufacturing interests alone offer more than 5000 prospective purchasers who will use from one truck to a fleet, and while it is impossible to estimate the number that will be bought by retail establishments, it seems reasonable to assume that this class of purchasers will account for enough to bring the entire number up many thousands. Figures given are for original installations and the replacement business will further swell the total.

The cities of Providence, Pawtucket, Woonsocket, Central Falls and Cranston, all large manufacturing centers, offer an almost unlimited potential market, and Newport, although not an industrial city, will nevertheless absorb many for overland haulage.

A Big Textile Center.

With nearly 3,000,000 cotton and wool spindles, the state is third in the manufacture of textiles, and fully 70 per cent. of factories devoted to the industry are motorized, which accounts for a large part of the truck tonnage already placed.

The location of the state, geographically, has also contributed materially to the total, and will be a potent factor in future development of the trade. It is situated between New York and Boston, is central to eastern Connecticut and southern Massachusetts, and thousands of tons of finished goods and raw material are moved by highway between the different points.

One public hauling firm alone, with headquarters in Providence, has contracts which call for the daily transportation of more than 100 tons of textiles

between Fall River, Providence and Danielson, and 20 trucks are employed exclusively in this work.

Providence is also a distributing point for freight arriving by water, much of which is moved by truck. It is impractical to total the number of tons handled yearly from this source alone, but the figures are amazingly high, and it seems reasonable to believe that nearly 75 per cent. of all freight brought by the various water routes is delivered by the motor hauler.

At the present writing there are five Providence-Boston, three Providence-Worcester and two Providence-Woonsocket truck lines operating on daily schedule with well developed systems, and practically all of the large trucking concerns send from one to six trucks over the road to Boston and New York daily, as demand necessitates. A Providence-Worcester-Springfield line has recently started which is said to be meeting with success, and plans are being formulated to include Hartford in the schedule by spring.

Farms Not Generally Motorized.

The agricultural industry, while it shows a shrinkage of nearly 23 per cent. in the last 10 years, nevertheless absorbs a reasonable amount of trucks, and it is estimated that nearly 40 per cent. of the farms are using power vehicles of the smaller type. Many of the large farms have gone in for intensive agriculture to an extent that makes up for much of the acreage formerly cultivated, and the truck has played a very important part in the development of such farms. The small farmer, thus far, has proven difficult to interest, however, and sales to men of this type have been comparatively few.

Practically all of the trolley lines serving strictly suburban territory have been discontinued within the last year, and this means that milk and other farm produce must now be handled by motor truck to a greater extent. At the present time there are about 20 large carriers exclusively engaged in transporting milk. Upward of 10,000 gallons are handled daily, and the price averages 15 cents a can.

The condition of the country roads naturally plays a large part in work of this sort, and it is unfortunate that rapid development of a system to handle produce from outlying farms is hampered throughout the state by very poor highways. Many of the roads are impassable at times and stretches, inadequately repaired, are soon as bad as ever.

Especially is this true in the sections of the state which were formerly served by the Providence-Danielson and the Sea View railroads, and it is hoped that pressure will be brought to bear that will eventually bring improvement. Not only do poor roads hurt the sale of trucks, but they also cause faster depreciation, one authority going so far as to say that trucks used promiscuously throughout Rhode Island depreciate twice as fast as those used in the neighboring state of Massachusetts. The renewal business naturally shows up better because of this fact, but the industry suffers in the long run, as more sales would be made if the highways were in better shape.

Truck registration fees in the state are nominal and offer no resistance to distribution, ranging from \$7 for a one-ton truck to \$36 for a nine-ton vehicle. Under present ruling load limits do not exist and the general attitude of officials is very favorable to development.

Sales of Heavy Trucks Slowing Up.

At the present writing it is estimated that the sale of heavy trucks has dropped more than 80 per cent. over a corresponding period of last fall. From Oct. 8 to Nov. 8, 1919, there were 34 registrations of new trucks of two-ton capacity or greater, and the same period of the present year shows only four. Many dealers incline to think that the recent price cutting flurry has caused the slow sale, but it appears that the unsettled conditions in the mill business has had much to do with the situation, and there is reason to believe that the immediate future will show a marked gain, now that the manufacturing plants have started work on a new basis of fairly steady production. There is no doubt but that the election has caused renewed confidence in the case of the textile industry,

What a Survey of the Rhode Island Truck Market Shows

Need of cooperation of manufacturers with distributors and dealers.

That there is need of standardized sales and service policies.

Lack of working capital a serious resistance to business development.

That manufacturers, distributors and dealers must be a unit in promotive endeavor.

That this will in turn benefit the owners who now lack the knowledge of transportation efficiency that will transform their operations from failures to successes.

That dealers and truckmen fail from the same reason: They had no knowledge of what they were undertaking.

That poor dealers, in the sense of lack of resources, lack of knowledge of transportation and ignorance of labor saving and economies, are usually due to sales representatives who make agencies without regard for the future and who care more for their own immediate salaries than the future of their employers or the industry.

That truck selling is not for the man with small capital, but those who have the training and experience as well as resources to develop business to sound principles

and for the future rather than the present.

That truck sales made by dealers or salesmen who must have money to keep going and who must extend credit to buyers always place the dealers at the mercy of those from whom capital is obtained. and, at best, is always a hand-to-mouth business that may be continued, but can never be made substantial and prosperous.

That financing numerous sales on credit can seldom be undertaken by dealers who must have working capital.

That time sales may incur too great risks for any dealer to take, and this leads to the need of concerns specializing that could practically divorce the dealer from further participation after the initial transaction.

That service, the one great sales factor, is primarily controlled by the manufacturer in agency contracts. Service not only sells trucks but keeps them sold. Service must be always available and the stations must have sufficient repair resources. do good work and employ good workmen. Rarely can there be a sufficient number of any one make of truck to keep a first class shop busy constantly, and for

this reason service can be developed with several manufacturers. What is wanted is skilled men who can direct shop work, and these can best be trained by the manufacturers and located with the agencies that require them.

That educating owners to need of service is essential. That systematic examination of trucks and training the owners to lubricate them thoroughly is necessary. Service organizations for the inspection of trucks must be maintained.

That educating owners to accounting is imperative. The need for knowledge of operating cost is very great. The expense of lost time and unproductive labor is large. Owners must be taught the value of quick loading and unloading equipment and facilities for handling freights. and the same knowledge should be made clear to those requiring highway transportation. Drivers should be trained to be efficient and economical of vehicle time. Those supervising use of trucks should know all details of the driver's work. should map routes that will avoid traffic and obstructions. Owners should know the cost and consequences of fast driving and overloading.

and this cannot help but make for better general trade conditions.

Small Trucks Moving Good.

Trucks of less than two-ton capacity have sold well all through the period of depression, according to registration figures, and orders booked for spring delivery indicate prosperous days ahead. A comparative review of registrations for the last three years shows that this type has held at the same level, and, as a matter of fact, the peak has apparently not yet been reached.

Truck Paper Hard to Place.

The general tendency of banking houses throughout the state to curtail loans has caused the loss of a small percentage of business during the last three months. In many cases good truck paper has gone begging, and had the volume of business been great it is evident that a hardship would have been worked by the tightened credits. Just what the situation will be in the future as business gets better is causing speculation. Few dealers in the state have any means of supplying extensive credit, and business placed with finance companies located in other cities has not proven satisfactory, dealer's report. although such concerns were formed for the purpose of handling motor financing. One distributor has papers to show that in one deal with a finance company he paid two per cent. a month for 12 months, although the notes

were only dated for six months. It is obvious that dealers or consumers cannot stand any such rates, and it is also plain that the Rhode Island trade has no well developed general system for the financing of motor trucks. The situation confronting some of the smaller distributors is admittedly grave, and it would not be surprising if certain franchises changed hands in the next few months.

Time Sales the Rule.

In connection with the financing of sales, it is interesting to note that many of the largest manufacturing concerns buy trucks on time. They figure that they can afford to pay the interest asked, thus conserving cash on hand, and the same thing holds true of the buyer in humbler circumstances. One conservative banker estimates that more than 70 per cent. of all truck sales made in the state are handled in this manner, and the practise seems to be increasing.

The general rule followed by most dealers in accepting initial payments is that the amount deposited must total 33 1/3 per cent. of the asking price, and most notes are made out to run nine months. although there are instances where the first payment has been as low as 15 per cent. and the final maturity dated 18 months. Evidence is offered to show that well financed distributors have done business on even more elastic terms than those noted, and there is no

set rule which can be outlined as strictly covering the transaction. Many dealers extend the time limit in the event of the operator not being able to meet notes. as they prefer to do this rather than take back a truck.

Few Changes in Agencies.

An encouraging feature of the business is the fact that only two franchises have been revoked in three years. Only one failure, strictly speaking, is noted. Certain concerns have changed partnerships, at least two have incorporated, and many are doing business along different lines than formerly, but the industry as a whole shows good health, and the promise of a substantial future. The last two years has seen big business men attracted to the industry, and this should eventually prove the solution of the financial problem, as it will serve to bring more capital into the field and certainly this is the crying need at the present time.

It was the writer's good fortune to hear one of the newer type of big business men who has recently joined the ranks of the distributors, in conversation with two young students who had decided to leave college and engage in the trucking business. They had been sent to him for advice, and they got it in heaping measure. He found that neither had ever worked except as clerks during summer vacations, and had ar

rived at a decision to enter the trucking game merely as the result of a desire for easy money. They were soon convinced that the "easy money" was a myth, and instead of selling them a truck with the prospect of having to take it back in a short time, the dealer "sold" them a college education. It is possible that they are going to thank him at some future time.

Refusing a Sale.

Another case had to do with a young Italian who came to the dealer with \$1000, which he wished to place as first payment on a truck. He was thoroughly imbued with a desire to transport milk from Danielson to Providence at 10 cents a can, and had been promised a load of 150 cans daily. The dealer soon showed him that he could not make a profit on the proposed basis of operation, and the sale was not made. When asked why he had discouraged the sale, the dealer answered, "The prospective purchaser must be told of the exact conditions of the business. He must have the costs of depreciation, upkeep and overhead pointed out to him in a fair way. This will make for better business eventually and will do away with the large amount of second hand trucks now on the market, as it will tend to eliminate the man of little intelligence and smaller experience, and the business just now is suffering from an influx of men of that stamp." One could not help but feel that he reflected the general attitude of the substantial dealer. Such men will hew their way to success over honest pathways.

Trucking Business Offers Good Return.

Rhode Island has many successful trucking concerns which were started in a small way. It is estimated that only 30 per cent. of the men taking hold of the business fail to continue, and many have done unusually well. One of the largest concerns in New England has headquarters in Providence, and there are at least 10 which use more than eight trucks, practically all of the time. One successful trucker was a traffic policeman for many years in Providence. He started with one truck about two years ago. At the present time he has four and they are all paid for. Another, three years in business, runs three trucks, has paid for a home and has bank books showing savings of nearly \$7000. These men are representative of the many who have made good. They have found that success came with the willingness to hustle, and the application of common sense methods to business, and have little time to sympathize with the pessimist.

Truck Rates Higher Than Railroad.

It is well nigh impossible to strike on any figure as being representative of truck rates in Rhode Island as there are many cut-price concerns which do business by the old horse and dray method. They will take short hauls for almost any sum offered when work is slack and will even go over the road to New York and Boston at a low rate, but the better class of trucking companies plan to transport freight at the rate of 90 cents

to \$1 a mile for large trucks, and about half that sum for trucks up to two tons capacity. One large firm makes a flat rate for five-ton trucks of \$1.10 a mile and has no trouble in getting business at this figure. Trucking rates generally are well above railroad freight rates. The saving of handling at each end of the route and other points of speed and efficiency tends to offset the increased outlay, however, and no one questions the amount charged.

Need Specialists in Selling End.

The truck salesman in Rhode Island, taken as a class, has had an easy time for the last two years. Sales have come easy, many times being merely a question of delivery, and almost any sort of a salesman could get business for a time. From now on the buyer will have a chance to shop round. He is getting a technical knowledge of the mechanics of the machine and the successful salesman of the future will have to be a specialist. It will be a buyers' market of course, but this will result in a healthy growth and is considered desirable by many.

The live dealer welcomes the change and already many sales campaigns are in process of formation. One dealer is going after the farmers' business with the avowed intention of landing a hefty part of it. He plans to circularize every one of them and intends to follow up with a personal solicitation in every case. Another man who has done considerable selling to mills has placed two of his men on salary and is sending them after this class of business exclusively.

He first tried out one man on salary, and his experience was interesting, and while it may not prove the rule, nevertheless serves to show possibilities. He had several commission men on the road and none of them were doing much. Thinking to try out an idea he had in mind, he offered one of them a good salary, and laid out a daily route for him to cover.

He first sent him to the purchasing agent of a large woolen mill. The salesman hadn't bothered calling on the prospect before as it was generally understood that all trucks were sold by one who was related to an official of the mill. The general idea was abroad that no one else could sell that particular purchasing agent, and when working on his own capital the salesman had passed him up as a prospect. When he was given a salary and told where to go he naturally felt that he had nothing to lose and in a short time he had landed a sale, much to his surprise. Three sales have since been made through the same purchasing agent and an entirely new line of prospects has been developed. This dealer intends to put more men on straight salary and the general tendency among dealers of the better class seems to be to follow suit.

Value of Service Recognized.

One Providence dealer who believes in service makes a practise of calling on his customers at their homes in the evening. He does not wait for them to come to him and, even though their trucks are running in a satisfactory man-

ner he finds that they like to talk matters over and there is no doubt but that he is amply paid for the time spent in the resultant good feeling. Many sales have come to him without solicitation and his business has shown a steady gain, all of which he attributes to keeping in touch with his customers.

He will not have an ill tempered repair man about the service station. "Know-it-all" mechanics have hurt business more than good men have been able to help it, in his opinion, and his motto is, "the customer is always right." He fully realizes the value of 24-hour service and tries his best to give it at all times. "If a man comes in with a crippled truck who has a contract that is getting him \$50 a day, I'm going to get him back onto the job if I have to stay all night to rush things along," is the way he puts it, and he has the reputation of doing just that. He carries a \$17,000 stock of parts and does not rely on New York or Boston to take care of the emergency.

Unfortunately high grade service is not the rule in Rhode Island. Some of the higher priced trucks are well lined up in this respect, but it is only too true that the average dealer does not pay enough attention to the matter. Some stations do not carry a supply of parts, depending wholly on service from the larger cities, and only four out of many stations visited appeared to have a stock that would adequately take care of any situation which might be faced. Many dealers are underfinanced to an extent that makes this impossible, but the fact remains that good service is maintained only at an outlay of money.

Courteous service is apparently lacking in many stations, and the personal element does not enter into the conduct of the average system to the extent that might be desired. Few of the sales rooms have service stations outside of Providence, and even Woonsocket, the business center of the northern part of the state, has only one. To be sure the state is small in area and perhaps Providence can take care of the situation, but it would seem as though better conditions would result if branch salesrooms in other parts were equipped to give service. Many a dealer has undoubtedly lost sales by reason of poor service, and this vital feature of successful salesmanship cannot safely be overlooked.

Charges Not High Enough.

The owners of garages as a class charge from \$7 to \$20 a month for truck storage, and do not appear to get a fair return on money invested. A truck of any size will use the space that could be allotted to from two to four automobiles, and with the increased charge of operating an establishment the rate charged seems insufficient. Newcomers into the field have had to pay fancy prices for land and construction. Once in operation they have been forced to meet existing charges, and one need not be a mathematician to figure the result. A general increase of 33 1/3 to 50% has been suggested, and it is probable that the extra charge will eventually be

made. The average charge for truck repairs is \$1 an hour, although cases are noted where \$1.50 is charged.

The foregoing is also generally true as regards repair work. Operating costs have increased and the efficient repair man is demanding and getting as high as \$1 an hour, the average wage being about 80 cents, and much of this advance has been absorbed by the shop owner, who, in many cases, can ill afford to be saddled with extra expense.

Buyer Should Be Educated.

The inexperienced operator, in many instances, does not get proper schooling in handling a truck. Many who have started in the trucking business have had no previous experience. Some dealers do not feel that they can afford to spend much time in educating the novice, as the commission on the sale does not admit of their so doing. This may be true, but the fault frequently lies with the dealer, in that he allows too much for second hand trucks taken in trade, and the profit margin is naturally small. It is a deplorable fact that certain "just-for-today" distributors have deliberately placed fictitious values on used trucks. The conservative man, who takes pride in the business, naturally can afford to meet the price offered, and the industry has felt the result of such policy.

The dealer would like to break even in handling the second hand vehicle and is entitled to do so, but under present conditions it is doubtful if he does. It usually costs something to overhaul and get a used truck in running order, and it is impossible to put much money out on them at the selling figures that now obtain.

Dealers' Organization Planned.

Realizing the value of cooperation, several dealers are formulating plans which it is hoped will result in an organization to include all dealers in Rhode Island. If the plans eventuate successfully, regular meetings will be held and certain policies outlined to better conditions generally. The second hand truck problem will be dealt with in some stable manner, and it is believed that efficient cooperation can be developed which will standardize trading allowances. The organization scheme is only in embryo at the present time, but it is planned to follow the lines laid down by a similar organization in New York, and there is no reason why this cannot be done.

Good Future Business Assured.

Everything indicates that truck distribution in Rhode Island will show a steady gain from the first of the year. Although it is said that the railroads are now becoming able to handle all traffic turned over to them, it nevertheless seems as though the average factory prefers the motor truck for short hauls, and this business will undoubtedly assume larger proportions as time passes. Mills and factories are opening again and this means business for the motor hauler. General trucking from districts formerly served by the trolley should show material gain during the coming year.

High rail rates have diverted an ever increasing amount of freight to the water routes, and this will add much to the development of truck business locally.

Dealers generally are optimistic. They look for banner business during 1921. They expect the present period of depression to be of short duration, and a careful review of the situation from all angles seems to indicate that their optimism is well founded. However, this early revival of trade is not coming unless those in the industry meet it half way. This means immediate action.

TRUCK HAULS BIG LOADS OF LOGS OVER STEEL RAILS.

Owing to the unusually bad road conditions in that section of the state, it was readily seen by G. C. Holston of the Holston Lumber Co., Loretta, Tex., that to log the 35,000-foot capacity mill in the usual manner was an impossibility. Accordingly, 2½ miles of steel track were laid and a Duplex four-wheel drive truck was equipped with flange wheels. By the use of turntables at the mill, as well as in the woods, they are now hauling six loads per day, over an average of 3500 to 4000 feet per load, making the 2½ miles, loaded, to the mill in eight minutes. There are two grades of not less than 2½ or 3 per cent.

The equipment consists of two cars built of standard heavy railroad trucks, with one set of trucks used as a semi-trailer which is directly back of the Duplex four-wheel drive truck. The third car is left in the timber to be loaded while the Duplex hauls one car and the semi-trailer to the mill. So successful have they been that the officials of the company expect to purchase another Duplex four-wheel drive truck and lay more steel.

TRUCKS CAUSE CURTAILMENT OF RAILROAD FREIGHT SERVICE.

The Pennsylvania railroad has curtailed way freight service between Philadelphia, Wilmington, Baltimore and the Delaware-Maryland peninsula because of the increased use of the motor truck in commercial hauling. Heretofore way freight trains were operated daily to accommodate the traffic between the cities and the rural sections, but at the present time motor truck lines are operating all over the peninsula, and the railroad service has been cut to an extent that trains are operated only every other day.

MOTOR TRUCKS MEET EMERGENCY WHEN RAILROADS FAIL

During the restricted railroad service of last spring many of the country's very large shippers turned to the motor truck as a solution of their freight problems. Among them perhaps none were in a better position to meet the emergency than the Linde Air Products and Prest-O-Lite companies, owing to the fact that these companies carried their own freight both going and coming—delivering full cylinders of oxygen and acetylene to individual zones where they were vitally needed and picking up empty cylinders that were badly needed at the charging plants for refilling.

The accompanying photographs show that the trucking alternative is not always a bed of roses. The trucks shown in the pictures are Pierce-Arrows and are loaded with Linde oxygen. Much of their way they had to fight a passage through mud up to the hubs, but they got through, delivered their cargoes where the oxygen was urgently needed and brought back their burden of empties for refilling.

The Linde company is now operating several fleets of motor trucks in various districts. The same is true of the Prest-O-Lite company. Other large companies that have not the advantage of picking up return loads of their own are, in some instances, carrying return freight for other shippers, thus making their trips pay both ways.

A HEARTFELT TRIBUTE.

Vice President Dan Gilkey of the Aca-son Motor Truck Co., Detroit, was tickled pink over the following, written hurriedly in pencil and directed to the company:

"I have three Aca-son trucks, one-ton, two-ton and 3½-ton, which I am very proud of. Have been using the two-ton 15 months with excellent service, and the one-ton better than 12 months with the expense of one spark plug and one fan belt, and the 3½-ton 10 months and not a wrench has been on it"

This was part of a letter from John B. Stephens of Paris, Ark., who uses a fleet of seven trucks, of which three Aca-sons form a part.



Pierce-Arrow Trucks Loaded with Linde Oxygen Successfully Fighting Their Way Through Mud.

FWD CHIEFS SEE BIG BUSINESS ABROAD

Europe is thoroughly "sold" on American motor trucks, according to President and General Manager W. A. Olen of the Four Wheel Drive Auto Co., Clintonville, Wis., who has just completed a two months' survey of truck conditions on the other side. He was accompanied on his tour by D. J. Rohrer and C. F. Folkman of the company's board of directors.

President Olen sees a lucrative market for trucks in Europe at an early day. American war trucks are being utilized in great numbers and the way they are standing up accounts for the confidence that people abroad are showing in the American-made article. They have proven a wonderful advertising medium and are building up future business for the truck manufacturers of the United States.

Among other things President Olen said:



W. A. Olen, President, Four Wheel Drive Auto Co., Clintonville, Wis.

President Olen's Comments.

"Among our distributors I found everyone enthusiastic over prospects for a healthy business. That there is a large potential market in European countries not only for motor trucks, but a great range of other mechanical equipment as well, was obvious. In many instances we saw man power doing work that in this country is done by machinery. Even the freight that is loaded aboard the steamer at New York by up-to-date conveyors is unloaded by man power on the other side.

H. C. of Gasoline Figures.

"The high price of gasoline in European countries is an important consideration. We found upon arrival in England that gasoline there was selling for

67 cents a gallon. For this reason buyers of pleasure cars and motor trucks as well are interested in obtaining the greatest gasoline mileage possible with their vehicles.

"In some of the countries of Europe labor practises the doctrine of "ca canny," which, in brief, means that the men do as little work as possible. Consequently there isn't the tendency to overload and speed motor trucks that there is here, which undoubtedly adds to their longevity."

Directors Rohrer and Folkman share President Olen's high spirit of optimism over Europe's capacity to absorb in bulk a healthy share of the production of American truck manufacturers at an early date. They are convinced that this market deserves the intense concentration of the truck makers of this country.



D. J. Rohrer, Director, Four Wheel Drive Auto Co., Clintonville, Wis.



C. F. Folkman, Director, Four Wheel Drive Auto Co., Clintonville, Wis.

GOV. SMITH OF NEW YORK TO ENTER TRUCKING BUSINESS JAN. 3

Gov. Alfred E. Smith of New York will enter the trucking business when he concludes his term on Jan. 3. He has accepted the post of chairman of the board of directors of the United States Trucking Corporation, New York city. The governor believes there is an immense field for this sort of work in New York city and he hopes to develop the business and expand it. He goes with the largest trucking concern in the world he believes. He will be associated with lifelong friends and is assured the cooperation of the president of the corporation, James J. Riordan, and his associates, all of them practical truck men.

In a statement Gov. Smith said in part: "The trucking corporation brought out and merged the business and equipment of 28 of the largest trucking firms existing in Greater New York. As a re-

sult it has more than 2000 employees, 2500 horses, 2000 trucks, 300 motors, immense equipment for stevedoring work, the hauling of structural steel and building materials, and other special facilities fitting it to handle everything from needles to locomotives.

"It has numerous branch offices well located to cover all parts of the greater city. Its work is zoned so as to obtain minimum hauls and to work in return loads as frequently as possible. It is competent to meet all sorts of emergency calls, being able to supply hundreds of trucks, day or night, on an individual call as early as it can supply a single one.

"Nevertheless, there is still a large field ahead for developing the trucking business up to the standard of other well organized lines of industry. It is these constructive possibilities that particularly interest me. Additional warehouse facilities must be provided; constructive measures should be taken toward further reducing traffic congestion on marginal streets and on cross-town

routes; there must be further development of port facilities; means must be devised for handling all freight moving through New York city with greater expedition and ease and at a rate that will tend to promote the commercial supremacy of the port of New York."

DENBY TRUCK SERVICE.

The North Texas Truck Co., formerly located at 707-709 Scott street, Wichita Falls, Tex., has again opened for business at 612-614 Indiana avenue and will carry a full line of auto parts and Denby truck parts. Special service will be given on Denby trucks. S. D. Hill is sales manager and Charles Hill secretary and treasurer.

A GOODYEAR BOOM.

The Goodyear Tire and Rubber Co. has notified 9000 former employees to report for work Jan. 1, and announces an increase in production from 6500 tires daily to 12,000.

BAKER AUTOMATIC TRUCK SNOW PLOW

The Baker Manufacturing Co., Springfield, O., is showing the truck trade a new and improved snow plow for the removal of snow from the highways and city streets which embodies many new improvements over its previous unit.

The plow is attached to the truck axle and front springs by means of a universal attachment which allows its being attached to practically any make of $3\frac{1}{2}$ and five-ton truck. Special arms are provided which may be adjusted to clear the springs by means of an adjustment on the sub-axle, placed just forward of the truck axle. Extension arms are provided which carry special clamps which attach to the truck axle and springs. Vertical arms fastened to the lifting frame carry the worm gear and spool on which the chain, which lifts the plow, is wound. A worm fastened to the operating shaft extends from the worm gear, through a universal joint to the driver's seat, terminating in a large hand wheel 24 inches in diameter, by means of which the operator is able to raise and lower the plow at will.

An improvement of decided merit has been made in the blade, which is of two-piece construction, either eight or 10 feet in length. The lower blade is of hinged construction, supported by six coiled springs at the back, allowing the lower part of the blade to spring quickly back into position after passing over obstacles on the street, such as manhole covers, stones, etc., without leaving any appreciable amount of snow behind. Adjustable shoes are provided at either end of the blade which keep the blade at the correct height from the pavement. The plow is swiveled on a half circle, which allows it to be used either right or left hand, as desired.

Moldboard 16 inches High.

The moldboard is 16 inches high by $\frac{3}{4}$ inch thick, made of carbon steel ground and polished. The blade is six inches

by $\frac{5}{16}$ inch carbon steel in two sections. The blade is hinged to the moldboard by three hinges to each blade and is held in position by six compression springs, 12 inches long, of $\frac{3}{8}$ inch wire. The circle is $2\frac{1}{2}$ inches by $3\frac{1}{2}$ inches by $\frac{3}{8}$ of an inch, made of angle iron, with series of holes for setting angle of blade. Circle connected with moldboard by heavy steel castings.

The sub-axle is $1\frac{1}{4}$ inches square, adjustable for any width spring centers. Adjustable shoes are equipped with a rack bar for keeping blade slightly off the surface of the paving, if desired. An important feature of the lifting device is that the plow can be raised 18 inches from the ground, a very important provision when bucking heavy snow.

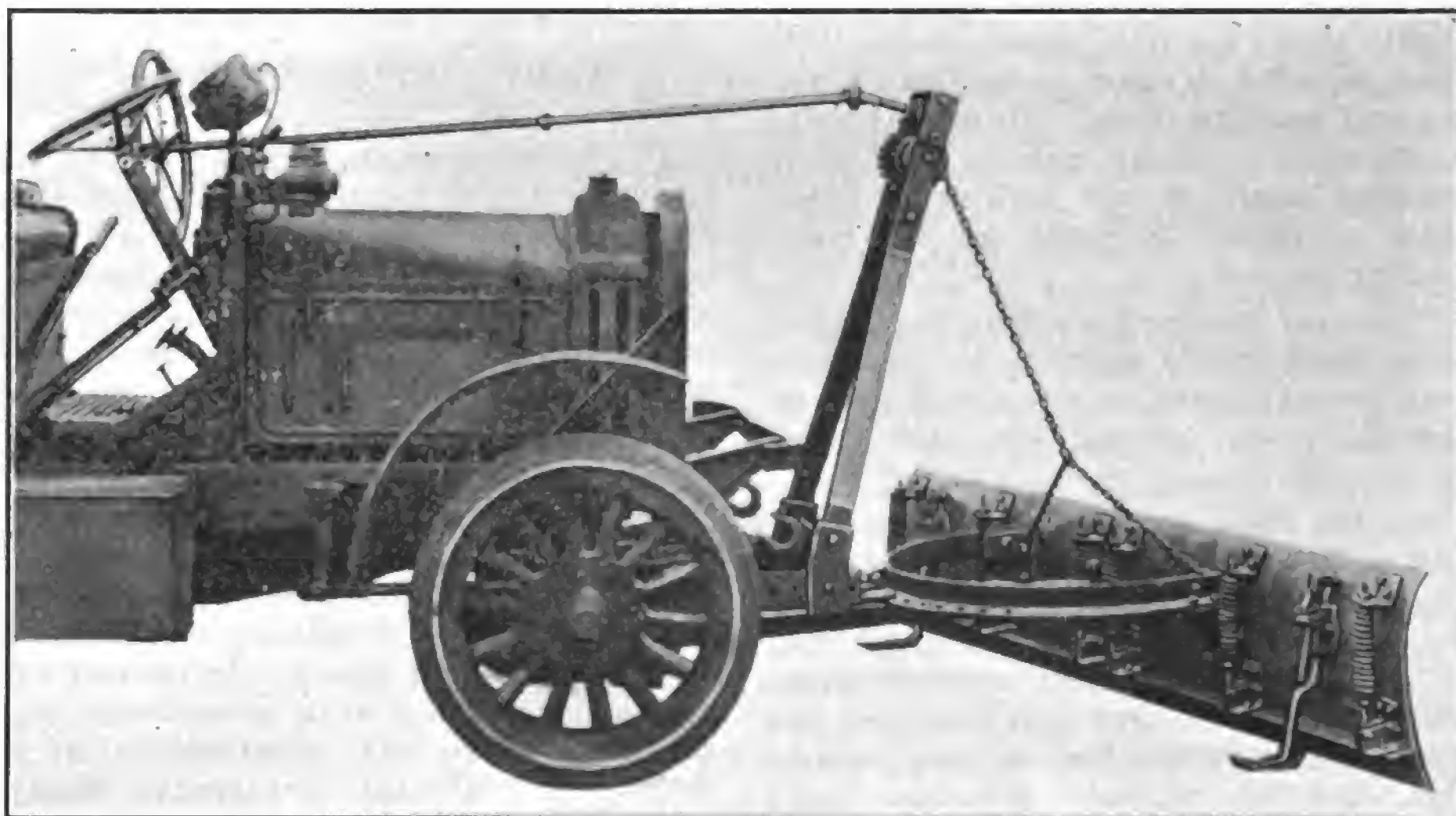
Parts Are Removable.

The lifting frame and moldboard of the plow are readily removable. The clamps and attachment over the truck

springs can be left on the truck, as they do not interfere with its operation. When a snow storm occurs the moldboard and frame can be attached in a few minutes and the plow is ready for action.

The width of path cleared by the Baker Auto Truck snow plow at the usual working angle in one trip is about eight feet with the 10-foot blade and about $6\frac{1}{2}$ feet with the eight-foot blade plow.

The speed at which the snow can be removed with this type of plow depends on the size of the truck, the depth of the snow and the grade of the road or street. In a fairly deep snow, under average conditions, a speed of from six to eight miles per hour can be attained. In lighter snows the speed can be increased up to 15 miles per hour. Even after a heavy snow, Auto Truck Snow Plows have been known to clear 25 to 30 miles of road in a working day to a width of about 15 feet.



The Baker Snow Plow Which Can Be Attached to the Axle of All Standard Trucks.

TRUCKS STAND UP ON U. S. CONVOY RUN

The transcontinental run of a caravan of the U. S. Motor Transport Corps from Washington, D. C., to Los Angeles, Cal., recently completed, proved among other things, that the roads and bridges of the South are in an alarming condition. The convoy repaired or entirely rebuilt 400 wooden bridges while en route. The condition of the roads is indicated by the fact that a period of four days was required to cover one stretch of 17 miles.

That the trucks on the trip nearly all finished in fine shape is one of the strongest tributes that has ever been paid to the sturdiness of the American motor truck.

Although no official report has been turned in the tour is also said to have demonstrated the superiority of pneumatic tires over solids. The drivers claim that the pneumatic shod trucks

came through in much better shape than those with solid tires. In order to get a comparison half the trucks were on air and half on solids.

The journey accomplished its purpose, which was to awaken the public to the need of well constructed and maintained transcontinental highways for both commercial and war time uses. Another object, the demonstration of the practicability of the motor truck as an efficient aid to the railroads, was also unquestionably achieved. As a result of the tour important data was obtained on equipment, highway and bridge construction and topography for military purposes. The trip also boosted army recruiting.

Col. John J. Franklin, Jr., commanded the convoy, in which were 33 officers and 150 men. The tour was over the

Bank Head Highway.

Vehicles making up the tra'n were:

Motor Transport Co.—One Dodge touring car, one Dodge delivery truck, five White $1\frac{1}{2}$ -ton cargo, three White $1\frac{1}{2}$ -ton cargo, eight Garford $1\frac{1}{2}$ -ton cargo, eight Packard $1\frac{1}{2}$ -ton cargo, four Standardized "B" cargo trucks, two FWD cargo, one kitchen trailer and two motorcycles—solos.

Service Park Unit—One Dodge touring car, two White $1\frac{1}{2}$ -ton machine ship trucks, one Dodge light delivery truck, two White $1\frac{1}{2}$ -ton cargo trucks and one Cleveland tractor.

For Headquarters Motor Command—Two Cadillac touring cars, three Dodge touring cars, two White staff observation cars, one GMC ambulance and four motorcycles—solos.

TRUCK VERSUS HORSE AND TROLLEY

TRUCK OUTHAULS TEAM BY 168,000 MILES IN FIVE YEARS

In summing up the question of horse hauling vs. motor truck, W. A. Carpenter of the Acme Motor Truck Co., Cadillac, Mich., says:

"The average two-horse team will haul two tons over the average road, at a speed not greater than three miles per hour. Allowing one hour for the noon day stop and another hour for loading, unloading, resting on grades and miscellaneous delays, it is safe to say that the team will in a 10-hour day cover not more than 24 miles.

"But at least one hour in the early morning before starting on the trip, preferably longer, must be allowed for the horses to be fed, curried, harnessed and watered, also part of the noon hour must be devoted to care of the horses, and at night, after working hours, some little time must be devoted to feeding, watering and bedding them. All of this extra work must be done outside of the 10 working hours, to say nothing of veterinary services. So much for the horse hauling method.

"Now for the truck's side: No preliminary work in the morning is necessary, with the exception of a few moments inspection every morning, desirable in any piece of machinery.

"At the close of the first day the truck will be 136 miles from place of starting, whereas the team has made but 24 miles. At the close of 300 days the truck will be 40,800 miles from the starting point, though during the 300 days the team has covered only 7200 miles. In other words, the truck has carried two tons 33,600 miles further than the team did in the same length of time.

"There can apparently be no argument concerning the efficiency of the two methods of hauling. The investment, of course, is much greater with the truck than with team, but the results are such as to outweigh this fact."

HARVESTER SPEED TRUCK.

The International Harvester Co., Chicago, Ill., will put a new type of light speed motor truck in production about the first of the year. It will be manufactured at the recently remodeled works at Lagonda, a suburb of Springfield, O.

NEW TRUCK TIRE.

The Canton-Blackstone Co. of Youngstown, O., announces a reduction in prices on its line of Blackstone Fabric and Canton Cord tires. The Canton-Blackstone Co. also announces a Canton Cord pneumatic truck tire that will be built along the regular lines of Canton Cord tire construction to give satisfactory service in this new field.



W. A. Carpenter, Advertising Manager,
Acme Motor Truck Co.

WANTS MOTOR HEARSE.

An undertaker in Mexico desires to purchase one or more motor hearses and requests catalogues and price lists. The address may be had by communicating with the Department of Commerce or any of the foreign and domestic commerce bureaus and referring to file No. 34,115.

TRUCKS FOR ALASKA.

A railroad 540 miles in length will be completed and in operation in Alaska in 1922. Governor Riggs, the territorial executive, is asking for a government appropriation for the construction of a scheme of highways to serve as feeder wagon roads to the government owned rail lines.

Why not truck roads instead of wagon roads and why not trucks instead of wagons?

MACK SALES INCREASE.

Sales of Mack trucks last month increased 43 per cent. over the month of October, announces the International Motor Co. The three months period just ended represents an 18 per cent. increase over the same period in 1919.

The company attributes its month-to-month sales increase in spite of adverse conditions, to quality of product, sales and service organization and largely to public appreciation of the fact that Mack trucks have been advanced in price only 15 per cent. since 1914.

HANDLES U. S. TIRE SALES.

The United States Tire Co. has appointed C. K. Whidden as manager of pneumatic truck tire sales. W. V. Logan, who has held this position, has been made manager of distributor sales.

CLARK EQUIPMENT CO. TO PRODUCE SPECIAL MO- TOR BUS AXLE

A new motor bus axle of the internal gear type has just been placed in production by the Clark Equipment Co. of Buchanan, Mich. The first model placed in production is that for a single deck, 20 to 30 passenger motor bus, to be equipped with solid or pneumatic tires. All models of this Clark bus axle will use standard stock parts.

The design of this axle provides for a low body with a minimum number of steps, insuring a low center of gravity and providing maximum road stability.

This new Clark axle is designed so that a low hung body may be used without loss in the seating capacity. It is to be noted that bus manufacturers have found it very desirable to design vehicles which are easy for passengers to enter and leave. Maximum efficiency in motor bus construction is obtained when a drop frame is used in connection with this Clark axle, providing a compact and efficient bus unit, permitting a short step, with easy entrance and exit. Specifications provide for the use of under-slung springs, another desirable feature. This axle is light and economical in use, as it takes advantage of these features in the application of the internal gear principle.

The Clark Equipment Co. announces that while the model of the 25-passenger bus axle has been put into production first, it is prepared to turn out units up to the largest size; in all of which standard stock parts are used, such as load carrying member, drive shafts and differential.

Great interest has been shown in recent months in the development of motor bus service. Electric street railways have been greatly handicapped by credit restrictions, difficulty of selling public utility securities and the high cost of labor. A number of cities have regular motor bus lines in operation and many truck companies are considering the advisability of establishing motor bus production departments. The larger tire companies have conducted extensive experiments in the use of solid and pneumatic equipment on passenger buses. The Clark Equipment Co. has had long experience in building bus axles and its engineers, who have kept in close touch with bus development, have incorporated into this axle all desirable features.

H. R. Williams, president and general manager of the Beaver Motor Truck Corporation, announces that the reorganization of the company is now practically complete and the capital stock has been increased to \$1,000,000.

The plans for 1921 cover a production of 2500 trucks, divided between three models, a 1¼-ton, 2-ton and 3-tonner.

Transportation Propaganda Inaugurated by Dealers

**NEW YORK SHOW PROMOTORS TO SUBORDINATE
COMPETITION IN ONLY EXHIBITION OF KIND THIS
YEAR TO EDUCATING OWNERS AND PUBLIC TO
MAINTENANCE AND HAULAGE ECONOMIES.**

DEMONSTRATION of the possibilities of highway haulage with power vehicles is the keynote of the Highway Transportation Show, which will take place Jan. 3-8 in New York city in the 12th Regiment Armory at Columbus avenue and 62nd street, and the First Field Artillery Armory at Broadway and 67th street, organized for the Motor Truck Association of America, Inc., by T. D. Pratt, general manager.

This will be, in all probability, the one exhibition of the year that will be devoted exclusively to highway transportation. It will differ from all shows previously held in that it will present trucks merely as a means of highway freightage, for the object of the organizers is to deal with the science of transportation, with reference to the conditions that generally obtain.

Today the business man who is desirous of using power vehicles for his own service is willing to accept the assurance of a reputable truck manufacturer as to the design and construction of the machines he produces. He understands that the engineers produce machines that are mechanically dependable. What he wants to know is in what manner he can utilize power vehicles in his own service, for time and labor are more valuable than ever before, and he understands that only by economies of these two important factors can he expect to compete with those who operate their equipment with carefully systematized organizations.

The Science of Transportation.

For this reason this exhibition will be devoted so far as is possible to the science of transportation, and will have features that will undoubtedly appeal very strongly to those who are interested in the uses of power trucks. The object of the organizers is to attract a very large number of those who are qualified to spread the propaganda that will lead to a better utilization of trucks.

This may appear to be visionary, yet there are at least 40,000 trucks owned in New York city and in the metropolitan district (a radius of 30 miles from the New York City Hall), fully 60,000 machines. Within a radius of 200 miles is probably a third of the entire number of trucks registered in the United States, and the show itself has such features that any owner of trucks could

profitably devote a week to intensive study of what is a primary factor in industrial and commercial life.

The Educational Aspect.

The show will consist of first a display of trucks, trailers, bodies, construction units and equipment for facilitating vehicle use, and besides this there will be a series of meetings, to take place each afternoon and evening, at which some of the best known men of the country will speak authoritatively on subjects that have been assigned to them. In con-

be given almost continuously during the afternoons and evenings.

Moving Pictures of Truck Use.

These are not to be individually of great length. One of the really formidable undertakings for the committee in charge of the meetings is to select from many thousand feet of film and a bewildering diversity of uses, those series of illustrations which will best present the detail described by the speakers. By this is meant that each speaker will have shown in connection with his discussion the pictures that will illustrate it and best accentuate his theories.

With reference to the exhibits of trucks. These will be made by the New York agents of a considerable number of the best known manufacturers. While the industry, as reflected by the National Automobile Chamber of Commerce, determined not to organize truck departments to make exhibit during the shows of passenger cars in New York and Chicago, the majority of the branch managers and dealers in the metropolis were so thoroughly convinced of the results obtainable from promotive endeavor that they abandoned a proposal to organize an independent show and engaged to cooperate to the fullest degree with the Motor Truck Association of America.

Have Abandoned Competition for Shows.

There is in this undertaking a departure from the competitive selling that has been characteristic of practically all exhibitions and each exhibitor seeks to promote the use of power highway vehicles, logically following whatever experience has suggested to him and joining in whatever may appeal to those who require any form of transportation. The exhibit of vehicle of each participant is regarded as an example of standard automotive engineering and construction, that has been determined to be dependable and useful, and so far as possible these will be shown with whatever may facilitate or afford the largest degree of productiveness.

To illustrate, standard equipment, such as bodies, hoists and the like are to be shown in the latest perfected forms and the different exhibitors are expected to demonstrate the practical uses of the different types they have adopted, together with whatever they have developed that may be specified as

TWELFTH REGIMENT ARMORY EXHIBITORS.

Trucks and Trailers.

Atterbury	Nash
Bessemer	Parker
Brockway	Rainier
Clinton	Reo
Federal	Riker
Gramm-Bernstein	Selden
Indiana	Service
Jumbo	Transport
Kelly-Springfield	Vim
Moline	Ward LaFrance

Highway Trailer

FIRST FIELD ARTILLERY ARMORY.

Trucks and Trailers.

Clydesdale	Gary
Corbitt	Sandow
Fulton	Acme Trailer

Trailmobile

nection with these meetings will be a series of motion pictures, some of which will be supplied by the United States government, and others by concerns that have developed them for educational purposes.

The motion pictures alone will afford a liberal education for any person concerned or interested in transportation. They are of innumerable subjects, all of them regarded of such importance as to justify the study of experts, and these are to be shown in connection with speeches, lectures and talks which will

special designs. But in addition to this there will be equipment that may be utilized for loading and unloading, either with a view to economizing labor or vehicle time, and beyond this will be the motion pictures that will illustrate the widely differing work that may be performed.

From this point of view the motion pictures will be distinctly valuable, as they will show vehicles used for work that will be clearly understood by all. For no description of work or the conditions could be as comprehensive or as well understood as the illustrations will be. As the pictures cover hundreds of uses of vehicles and conditions that make for economy or extravagance, and accurately reflect what the speakers will impress upon the meetings, one will understand that the educational feature of the show will be worth the undivided attention of every owner of trucks and of every person who has anything to do with transportation.

Each Day Individualized.

The programme will be extremely diversified and it will be in two forms of meetings, one of which will be general, without illustrations, the addresses to be made from the reviewing stand in the 12th Regiment Armory. The others will be in one of the squadron rooms, which will afford seating for about 500, in which the pictures will be shown.

The six days have been designated as follows:

Monday, Jan. 3, "Opening Day."

Tuesday, Jan. 4, "Army Day."

Wednesday, Jan. 5, "Motor Accident Prevention Day."

Thursday, Jan. 6, "Transportation Day."

Friday, Jan. 7, "Farmers' Day."

Saturday, Jan. 8, "Motor Truck Association Day."

The speaker from the reviewing stand "Opening Day" will be Secretary of State of New York J. J. Lyons. On "Army Day" Secretary of War Newton D. Baker will make an address if he is not officially detained in Washington. Police Commissioner Richard E. Enright and Special Deputy Commissioner Dr. John A. Harriss will speak on "Motor Accident Prevention Day." "Transportation Day" former Governor Alfred E. Smith will speak. "Farmers' Day" Secretary of Agriculture Meredith will address the visitors and there is possibility that other speakers will be added to the list.

On each of these days the programme of the meetings that will consider subjects relating to transportation will be addressed by different speakers. For instance, a group of officers of the United States army will deal with phases of motor transport operation as observed and experienced in the service during the war and peace. Ernest Farr and Dr. Williams, representing the Bureau of Economics of the Department of Agriculture, will supplement the programme on "Farmers' Day." There will be lectures on mechanical and technical subjects by some exceedingly well known engineers. One phase that will receive

special attention will be "Lubrication," which will be presented by two of the best known chemists connected with the industry.

Phases of Truck Service Economy.

The operation of trucks, with reference to economies of time and labor will be dealt with at length by several speakers, and others will take up the use of special equipment, the possibilities for economizing vehicle time by improving warehouse facilities for loading and unloading freights, the study of traffic conditions as restricting the speed of vehicles, teaching drivers to avoid traffic, to follow mapped routes, to make quick time between points by consistent driving rather than speed, to avoid overloading, to drive moderately when not hauling freights, and others will discuss mechanical maintenance from various viewpoints.

One group of speakers will consider the value of systematic inspection of vehicles so that adjustment and restoration will be made so that there will be the least loss of time from actual service, and there will be the greatest degree of productiveness for the owners. This will lead to the subject of records and their value, which is one of the most important factors that will be considered by the meetings.

Special Education for Owners.

One will understand that these meetings are open to all who shall attend the show. They will be both afternoon and evening and so far as possible technicalities will be avoided, that any person can thoroughly comprehend the subjects. Statement that the visitor who shall attend all of these will have greater educational opportunity than would be afforded by any college extension course of study is extremely conservative. As a matter of fact no educational institution can expect to offer so comprehensive a course of study, for it could not obtain the services of so many authorities. The services of the men who will take part in the meetings are in many instances beyond price. Their participation in the programme is not because of expectation of individual gain, either financially or in professional prestige, but is due entirely to their desire to promote generally the science of highway transportation, in which they have deep concern.

The men who operate trucks, no matter what the number, can do themselves no greater service than devote their own time if possible, or insist that the men who have direction and supervision of the equipment they own attend the meetings. This may appear to many, who believe they have profited from experience, to be unnecessary, but as a matter of fact the information obtainable from a considerable number of men, abundantly qualified by study and experience to be regarded as authorities, cannot be disregarded. The application of one idea to any existing service, and this is a very small measure of returns to expect, might lead to extremely substantial returns.

Specific Information Obtainable.

The meetings will undoubtedly prove profitable from another angle, for any person can from discussion with any given speaker following the address obtain by queries specific information. This plan has been adopted with a view of affording scope that would not be practical were the speakers limited.

What has been stated with reference to the meetings has been applied solely to their value to the people generally. But no matter what the object this could not be attained without the public is informed. To this end an extremely interesting campaign has been organized, and this is now progressing. The publicity has been extremely widespread and the keynote is that this is essentially a transportation show, not merely a display of power vehicles and equipment.

Vehicles Not Subordinated.

This statement does not, however, mean that trucks will not be a feature. The exhibition of vehicles will be probably the most interesting ever organized in this country, because it will include the highly specialized products of approximately 30 of the best established concerns in the industry. It will not be a show of what may be regarded as new in the sense of mechanical evolution. To the contrary, it will be rather confirmation of standard engineering practise, which has been proven beyond all question, with the added refinements that come with concentration to obtain simplification, fullest accessibility, greater dependability and increased endurance.

The show will be in two departments in the sense that it will be in two buildings a short distance apart, but each of these may be regarded as a show distinct in itself. There will be in each a sufficient number of exhibits to interest any visitor. The 12th Regiment Armory will be the principal department from the fact that the original intention was to use this structure exclusively, and the first allotment of space was in this. But when the demand was realized the later applicants were assigned to the First Regiment Armory, and in this will be seen approximately as many exhibits as in the other building.

One of the features will be an essay contest for chauffeurs in which a \$500 prize will be awarded to the winner. Each chauffeur wishing to compete will register at booths provided for that purpose in the 12th Regiment Armory and the First Field Artillery Armory.

Many 11th Hour Applicants Probable.

The management of the show has reason to believe that there will be numerous applications for space in addition to those received, and that a considerable number will of necessity be denied, for there is little now available, and this has not been allotted because of requests from those who have decisions pending. The industry as a whole has been more or less influenced by the conditions now obtaining, but there has been realization that promotion will do more for the adjustment of business than any other factor, and each individual enterprise must

do its part to bring about a restoration of normal conditions.

The exhibitors of trucks as a rule are the manufacturers' representatives in the metropolitan district, who have the support of the concerns so far as this can be consistently given. The importance of New York as a market is keenly realized and very few of the manufacturers are disposed to neglect the possibilities. Not only does this apply to the local sales, but to the entire eastern section of the country, for which New York city is the logical commercial center. Not only this, it is the main export market and will receive the attention of those who are desirous of exploiting foreign markets.

The Management of the Show.

The show is managed by T. D. Pratt, executive secretary of the Motor Truck Association of America, and general manager of the Motor Truck Association, Inc., which has been incorporated as an exhibition company. He is the representative of a committee consisting of A. M. Welch, Reo trucks; J. A. Innes, Brockway trucks; W. H. Moore, Garford trucks; Paul Campbell, Indiana trucks; R. S. Locke, Federal trucks; W. Lawson, Nash trucks, and E. A. Travis, Riker and Kelly-Springfield trucks.

This committee of eight devoted much of the time for a considerable period to the details of organization. The object has been to impress upon manufacturers the unusual scope of the exhibition and to enlist their endeavors in the promotional work that has been outlined. The committee has sought to make the exhibition national in the sense that it has outlined and inaugurated a big, broad propaganda that has such merit that it should be taken up elsewhere by the industry and given the greatest possible impetus.

Statement should be made that the exhibits other than vehicles are principally construction units and equipment that can be incorporated with practically all existing types and that hardly without exception these are made with the object of establishing their engineering value. The exhibitors will hardly expect to make retail sales, but will concentrate on mechanical demonstration and general promotion.

The exhibition will be open from 10 each morning until 11 o'clock each evening, and the speaking and meetings will take place afternoon and evenings. Because of the uncertainty of the demands upon some of the speakers who are national, state and municipal officials, and the desirability of conveniencing them so far as possible with reference to time, the arrangement of the programme for the meetings has been deferred as late as possible.

There will be much interest in the appearance of Gov. Smith of New York, who will retire from office New Year's Day, and who immediately upon his retirement will become president of the United States Trucking Corporation, a combination of a number of New York city concerns. Because he will be a large

factor in highway haulage in the metropolis, and as he has studied intensively the work that he will take up, his attitude with reference to legislation will be observed with unusual interest.

BESSEMER MOTOR CO. MAY LOCATE BRANCH IN HOUSTON.

W. B. Roberts, Jr., manager of the western division of the Bessemer Motor Truck Co., Grove City, Pa., has been in Houston, Tex., looking over its facilities as a distributing center for Mexican trade. He reports them ideal and it is probable that the company will have a branch there in a short time. The Bessemer company has a branch at Oklahoma City and another at Wichita, Kan.

GOOD-BYE AND BAD CESS TO FLY-BY-NIGHT TRUCK DEALER.

Two curiosities to be laid away with the going out of 1920 will be John Barleycorn and the hand-to-mouth truck dealer. After this year both will be but memories.

Which did the most harm is a topic for debate. To the industry in which he had his swing the fly-by-night dealer was a handicap as great as was King John to the general public. His day is done and not a tear is shed.

The manufacturer has learned in recent times that the dealer is an investment and that the wrong kind of dealer is a most costly investment. From now on new distributors and dealers to be signed will be men of solidity, financially, commercially and intellectually.

This new viewpoint is possibly the greatest good that is to come out of the present temporary business lull.

PATRIOT TO PULL THROUGH.

Federal Judge Thomas C. Munger, Lincoln, Neb., has appointed Joseph E. Rosenfield of Omaha receiver for the Hebb Motors Co. and the Patriot Motors Co., motor truck manufacturing plants at Havelock, a suburb of Lincoln. The Patriot company is the successor of the Hebb company, but had not absorbed entirely the stock of the latter. It is said that the assets, if carefully handled, will more than meet the liabilities. The application for the receivership was made by supply houses of Omaha and Kansas City.

ROY L. DAVEY WITH BOSCH.

Roy L. Davey, former sales manager of the Bethlehem Truck Co., Allentown, Pa., has been made manager of the Detroit branch of the American Bosch Magneto Co., succeeding M. Tost, who has been made sales manager for the central district.

KOEHLER SIGNS S. C. HARVEY AS GENERAL SALES MANAGER.

The H. J. Koehler Motors Corporation, Bloomfield, N. J., has acquired the services as general sales manager of Samuel C. Harvey, former sales manager of the Indiana Motor Truck Co., and for 20 years an active and prominent figure in the industry. He is a specialist in the truck field, in which he has directed sales campaigns, worked on the road and in the advertising and exporting branches. His ability, experience and wide acquaintanceship should prove a most valuable asset to the Koehler Corporation, which but recently moved into its large new factory at Bloomfield.

RICHARD H. EDDY MADE SUPERVISOR FOR RENSTROM CO.

The Frank O. Renstrom Co., San Francisco, distributors for Grant, Premier and Briscoe cars, Grant and Atterbury truck and Twin City tractors, has just appointed Richard H. Eddy to the position of district supervisor of the Northern California district. Mr. Eddy has been employed by the company for some time and the new position is in the nature for a promotion.

PACKARD AGENCY MOVES.

The sales rooms and offices of the Packard Motor Car Co. of Boston, in Providence, R. I., are to be installed in the new Packard service station on Aborn street after the first of the year. The company has been located at Washington and Empire streets for five years, but the policy of putting all departments together has necessitated a change.

NEW GARFORD TRUCK AGENCY.

The Clamp-Howard Motors Co., San Antonio, Tex., has just started in business as distributor of the Garford line of trucks. They report good prospects for sales and have already lined up some good business.

NEW WATSON ENGINEER.

J. E. Gramlich, for some time connected with the Chase Tractors Corporation, Ltd., Toronto, Ont., Canada, has accepted an engineering position with the Watson Products Corporation, Canastota, N. Y.

DON HARRIS SALES MANAGER.

D. B. Richardson, Oklahoma City, Okla., distributor of O. K. trucks and trailers, and Lally lighting plants, has announced the appointment of Don Harris as sales manager.

NEW DUPLEX TREASURER.

The Duplex Truck Co., Lansing, Mich., has named Andrew Lagenbacher as secretary-treasurer, succeeding George W. Hewitt, resigned.

ROAD BUILDERS TO NEED TRUCKS

BILLION DOLLARS READY TO BE EXPENDED IN NEW HIGHWAYS

The November election provided \$192,000,000 for highway improvement. In addition, Virginia directed the Legislature to vote highway bonds to the extent of \$50,000,000, and Kansas also passed an enabling act. New Jersey also voted \$29,000,000 in bonds for the construction of the vehicular tunnel under the Hudson river. The states where highway bond issues were carried, with the amounts, follow: Missouri, \$60,000,000; Minnesota, \$75,000,000; West Virginia, \$50,000,000; Colorado, \$5,000,000; Idaho, \$2,000,000. California approved a proposal increasing interest on highway bonds from 4½ to six per cent.

Other bills appropriating \$272,800,000 have been passed since 1918 as follows: Alabama, \$25,000,000; Illinois, \$60,000,000; Michigan, \$50,000,000; Pennsylvania, \$50,000,000; California, \$40,000,000; Oregon, \$22,500,000; Maine, \$10,000,000; South Dakota, \$4,500,000; Utah, \$4,000,000; Wyoming, \$2,800,000; Nevada, \$1,000,000; Maryland, \$3,000,000; total, \$272,800,000.

The total appropriated is \$543,800,000, which, with available Federal aid of \$160,000,000, provides \$703,800,000 for early highway construction. The National Automobile Chamber of Commerce estimates that funds obtained from direct levies and other sources of state revenue and county issues or appropriations will bring the amount up to a billion.

In only four states, Florida, Montana, Washington and New Mexico, were bond issue proposals defeated and in each case the defeat is attributed either to purely local conditions or to provisions in the respective measures which failed to meet with the approval of the electorate.

NEW ROAD BUILDING PHASE.

The Division of Engineering of the National Research Council is undertaking a new phase of the nation's road building program and has called in state highway engineers and other experts to aid in the movement. The object of the new plan is to coordinate the work of road building throughout the country with a view of having detailed information concerning all phases of highway construction available to every road engineer.

NEW MASSACHUSETTS HEADLIGHT LAW.

Headlights of standard specifications will be used on motor trucks in Massachusetts after the first of the year. These lights must show a substantial object in the roadway 200 feet distant from the truck at a height not more than 42 inches from the ground, and shall be so arranged as to throw light 10 feet to each side of the path.

SUB-GRADE TESTS COUNTED ON TO SAVE MILLIONS.

The sub-grade committee of the Federal Highway Council decided at a meeting at Wilmington, Del., Nov. 22-23, to speed up sub-grade research work, in which investigations are now being made in widely separated points throughout the country, in order that road building on a greater scale than ever before may be undertaken without a wasteful expenditure of funds. It is hoped that this movement will save millions of dollars to the public.

Engineers, highway officials and scientific men from leading universities attended the conference, over which Gen. T. Coleman Du Pont of New York presided. Gen. Du Pont, S. M. Williams, chairman of the Federal Highway Council; C. M. Upham, state highway engineer of Delaware, and H. G. Shirley, former state highway engineer of Maryland, addressed the gathering.

Among the scientific men attending were: Prof. Hector J. Hughes, dean Harvard Engineering school, Cambridge, Mass.; A. T. Goldbeck, testing engineer, Bureau of Public Roads, Washington, D. C.; Prof. F. H. Eno, chair of engineering, Ohio State university; H. E. Hilts of the Pennsylvania State Highway department, H. G. Shirley of the Federal Highway Council, and Ira B. Mullis, Bureau of Public Roads, Washington, D. C.

OVERLOADING BIG FACTOR IN ROAD WEAR, SAYS R. E. FULTON.

R. E. Fulton, vice president of the International Motor Co., says the practise of overloading is the real cause of excessive road wear, and in a letter sent recently to all Mack truck branches, dealers and salesmen, makes a strong plea to discourage overloading among truck users in the interests of highway preservation.

"Truck overloading is disastrous to both the vehicle and the highway," he says. "If its results were confined to the truck it might be well to let each individual learn for himself that it does not pay. But unfortunately overloading is one of the principal causes of road wear.

"A motor truck designed to carry a certain tonnage is constructed throughout, including width of tires and safety factors, to handle just its rated load. Any considerable overload gives more than the standard 800 pounds per inch of tire width and concentrates the load on this small point of contact.

"There is economy both as to road wear and as to truck operating costs in big unit loads, but not when they are carried on vehicles too small to handle them."

It is estimated that there are over 10,000 motor haulage lines in the United States. Some of these have as high as \$2,000,000 invested in haulage equipment.

WEAR ON HIGHWAYS DUE TO TRAFFIC GROWTH, NOT MOTOR TRUCKS

That the growth of traffic rather than heavy duty trucks or any other agency has been responsible for the wear on American highways was the telling point brought out by W. P. Blair of Cleveland, O., in a discussion during the meeting of the sub-grade committee of the Federal Highway Council at Wilmington, Del., Nov. 22-23.

Mr. Blair stated that 20,000,000 people had been added to the population of the United States, practically without one inch being added to the transportation facilities of the country, and that on top of this increased population was an increased tonnage due to greater buying by the people equal to another 20,000,000, making a total of 40,000,000, in the face of inadequate transportation. The result of this increased tonnage, it was asserted, had been to break down roads through no fault of construction, but because traffic growth had not been taken into full account.

The development of railways engineering was used as an example to show why heavier type highways must be built since the same law of tonnage growth applies to both the railway and the highway. In the case of railways, Mr. Blair asserted, the laying of heavier rails, enlarging tunnels and reducing grades, has been going on constantly during the past 30 or 40 years, and yet the highway without a comparative development, had been called upon within the last 10 years to sustain a traffic growth unequalled in any like period in the history of the country. The situation thus created, it was pointed out, called for a determined effort to build better road foundation in order that breaks in the surface may be eliminated.

C. L. HALLADAY VICE PRESIDENT OF JACKSON CO.

C. L. Halladay has been appointed vice president and general manager of the Jackson Motors Corporation, Jackson, Mich. He was formerly assistant to the general manager of the Maxwell Motor Co., Detroit.

NEW MENOMINEE ENGINEER.

William J. Walker, recently employed as a draftsman with the Southern Motor Manufacturing association, Houston, Tex., has been made assistant chief engineer for the Menominee Motor Truck Co., Clintonville, Wis.

NEW GMC QUARTERS.

The General Motors Corporation is now installed in its new quarters in the Durant building, Detroit, claimed to be the largest office building in the country.

TOWER 1½-TON MODEL IN PRODUCTION

COMPLETING its series of trucks with the development of a 1½-ton chassis, the Tower Motor Truck Co., Greenville, Mich., is now producing these machines in considerable numbers. Besides this the company builds truck chassis of 2½, 3½ and five tons rating. The design is practically the same as the larger units, differing mainly in dimensions of parts.

The company's engineers concluded that as the design had been practically proven in widely varying service and this experience had extended over a period of more than three years, there was every reason for continuing it in the smallest chassis. The chassis is constructed of the same makes of standard construction units used in the larger chassis and the assembly of these has been developed with exceptional care, for the machines may be driven up to 25 miles an hour, and this is considerably faster than the speeds for which chassis of similar capacity are designed.

The claim is further made that the trucks can be overloaded with safety, for the chassis are unusually well constructed. They are equipped with engines that will develop 37 horsepower at 1000 revolutions a minute, and with the wheels shod with large pneumatic tires what is termed, as cross-country hauling can be done with the trucks without approaching the limit of safety obtained by the designers.

The construction units include Continental engines (type C-4), equipped with Zenith carburetors and Eisemann magnetos, Tower radiators, Fuller dry plate clutch, Fuller selective sliding gear transmission gearsets, Blood Bros. universal joints, Timken semi-floating rear axles, Detroit springs, Ross steering gears, Prudden wheels and Firestone tires.

Engine a Continental Red Seal.

The engine is a four-cylinder, water cooled, L-head type, with cylinder bore of 4½ inches and stroke of 5¼ inches, that is rated at 27.22 horsepower by the S. A. E. formula, but which will develop full 10 horsepower in excess of this, which is probably more than will ever be needed for any work that will be undertaken with them.

The engine cylinders are cast en bloc with the water jacket integral and with the head separate. Both the block and the head are liberally water jacketed and the chambers are so formed that they will have freedom of circulation. The pistons are the same material as the cylinders. The crankcase is two-section, the upper carrying the main bearings. Forward and rear extensions form the housings for the timing gearset and the flywheel, and the lower section contains the oil reservoir. The lower section can be removed quickly for inspection of or work on the main and connecting rod bearing. The crankshaft is an alloy steel drop forging, heat treated and ground to size. It

is a three-journal type with large journals. The camshaft is drop forged from high grade steel with the cams integral, and it is case hardened and the cams are ground to master cams on special machines. The connecting rods are heat treated I section steel drop forgings. The timing gearset gears are large and have wide faces. They are helically cut and are practically noiseless when driven.

Cooling and Lubricating Systems.

The engine is lubricated by a constant level splash system, the oil being drawn from the reservoir by a plunger pump driven by the camshaft and forced to the main bearings and the timing gearset. The excess drains to the base of the crank chamber, where it accumulates in troughs, whence it is distributed by the sweep of the big ends of the connecting rods to the cylinder and piston walls, the wristpins, the camshaft bearings, the cams and valve tappets. The overflow is carried to the reservoir, where it is filtered before being circulated. The oil pump is so located that it may be quickly removed when cleaning is necessary.

The Cooling System.

The engine is cooled by water circulated through the cylinder jackets and the radiator by a centrifugal pump driven through an outside shaft. Radiator is constructed with cast top and bottom tanks and the cooling section is a plain tube type. It is so constructed that the tanks and side members can be disassembled by removing a series of bolts and the section replaced or repaired. Cooling is promoted by a four-blade fan mounted on a shaft on an annular ball bearing in an adjustable bracket and driven by a belt from a pulley on a forward extension of the pump shaft.

Engine Auxiliaries and Power System.

The engine is equipped with an Eisemann high-tension magneto and a Zenith carburetor, the fuel being drawn from a 20-gallon tank under the driver's seat. The engine is mounted on a forward trunnion carried on a cross member and on arms cast integral with the flywheel bell housing at the rear. The en-

gine is combined in a unit power plant with a Fuller dry disc clutch that is practically self-compensating for wear, and which requires no attention, and a Fuller selective sliding gear transmission gearset having three forward speed ratios and reverse. The shafts are large and the gears are wide faced. The shafts are mounted on annular ball bearings.

Timken Rear Axle.

The main shaft is a tube type of large diameter in two sections, with three Blood Bros. universal joints, the rear end of the forward section being mounted in a self-aligning SKF bearing carried on a cross member. The rear of the after section is coupled to the worm shaft of a Timken semi-floating rear axle. The worm shaft, the differential gearset and worm wheel and the axle shafts are mounted on Timken roller bearings that are adjustable. The cover plate of the axle bowl is the carrier on which are assembled the worm shaft and the differential gearset, and lubrication is afforded by an oil bath in which the worm wheel is driven.

Axles, Frames and Springs.

The forward axle is a special steel alloy I section drop forging, heat treated, with heavy steering knuckles. The wheel spindles are fitted with Timken roller bearings. The wheels are wood, artillery type, shod with Firestone pneumatic tires, the forward set being 35 by five inches and the rear set 38 by seven inches.

The frame is constructed with pressed alloy steel channel section 5½ inches deep with webs 3¼ inches wide, with four wide cross members, strongly reinforced and gusseted, one of the cross members being directly over the rear axle and another well ahead of the forward hangers of the rear springs carries the bearing for the rear end of the forward section of the driving shaft.

The springs are semi-elliptic, the forward set being 42 inches long and 2½ inches wide, and the rear set 52 inches long and 2½ inches wide. The main leaves of the rear springs are silico-manganese steel. The rear springs are full



The New Tower 1½-Ton Model Which May Be Driven up to 25 Miles an Hour.

shackled and the spring eyes are bushed and all bolts are hardened and ground.

The relation of the rear axle is maintained by tubular radius rods that take the driving and braking stresses, the rods being coupled with universal joints at the hangers. All joints in the radius rods are fitted with steel bushings that may be easily renewed.

The Control Members.

The steering gear, located at the left side, is a fore and aft type, with worm and solid nut, with means for adjustment to compensate wear. The control is standard, and both sets of Duplex brakes expand in 16-inch drums on the rear wheels. The brakes are fitted with a device that automatically adjusts them when clamping. The chassis is lubricated by the Alemite system, by which grease may be forced into all joints and bearings at 500 pounds pressure.

The wheelbase of the chassis is 142 inches and there is body space on the frame back of the driver's seat 138 inches long. The maximum road speed when loaded is stated to be 25 miles an hour. The chassis is sold equipped with driver's seat, cab, fenders, running boards, windshield, curtains, oil tail lamp, Prest-O-Lite head lamps, gas tank, power driven tire pump, tool box, foot horn, jack, tire repair outfit and tool kit. The weight of the chassis is 3900 pounds.

The Tower Motor Truck Co. is to double production in 1921, concentrating on three sizes.

GET BUSY!

While some government departments have been prone to assail the automobile industry, the Department of Commerce has been foremost among institutions striving to build it up. Export business is a determining factor in business today and the Bureau of Foreign and Domestic Commerce has been a right arm in the task of introducing and putting American automotive products above par abroad.

The Department of Commerce needs friends today. Unless there is a rallying behind its request for an appropriation to continue its mighty service in behalf of American industry it will lack financing to carry on this splendid work.

Every person in the automotive industry needs the Department of Commerce at its best and it can only be at its best when financially equipped to properly operate. Its assistance is needed to keep truck, car, parts and accessory factories busy the year around.

Each individual of the great automotive family should go on record with his congressman and senator as to his attitude toward a sufficient appropriation for the Department of Commerce to function at high speed. This is a big issue and calls for immediate action.

UNIFORM TRAFFIC RULES.

The National Conference on Highway Traffic Regulations will meet in Washington Jan. 10 to reach a final agreement on uniform traffic regulations which can be presented to the 42 legislatures meeting next month. The National Conference is a consolidation of all existing organizations which are interested in standardizing traffic legislation and regulation. The consolidation was effected this month at Cleveland.

Among the organizations represented are: American Automobile Association, National Automobile Chamber of Commerce, National Automobile Dealers' Association, Trailer Manufacturers' Association of America, Motor and Accessory Manufacturers' Association, National Implement and Vehicle Association, National Association Brotherhoods of Threshermen, National Safety Council, etc.

Among other organizations invited to participate in the coming deliberations are: American Association of State Highway Officials, National Automotive Equipment Association, Interstate Commerce Commission, Society of Automotive Engineers, Department of Agriculture, National Team and Truck Owners' Association, Chamber of Commerce of the United States, National Highway Engineers' Association, etc.

It is intended that every interested activity shall be represented.

HORACE E. DODGE, HEAD OF BIG CAR AND TRUCK CONCERN, DEAD

Horace E. Dodge, millionaire automobile manufacturer, died at his winter home at Palm Beach, Fla., Dec. 10.

It was unexpected by his acquaintances and friends in Detroit, who had not learned of Mr. Dodge's illness. His health had been impaired, however, since an attack of pneumonia last winter.

Mr. Dodge has been the sole head of the Dodge Brothers automobile interests since the sudden death early this year of John F. Dodge, his elder brother. The two brothers were taken ill with pneumonia while attending the automobile show at New York and for a while it was feared that neither would survive.

There was little difference in their lives. They were devoted to each other and were seldom separated in either work or play. They were born in Niles, Mich., where they went to school and then acquired their first knowledge of machinery in the shop of their father, an iron worker and machinist. When still mere youths they constructed the first bicycle seen on the streets of Niles.

On completing their apprenticeship in the parental shop they worked as journeymen machinists in several Michigan cities until the year 1901, when they started their own place in Detroit. They employed only 11 men and used machinery taken in payment of a debt. They

began to specialize—John becoming the business executive and Horace the technical expert on gas engines.

When Henry Ford organized his company in 1902 he took the Dodge brothers in with him for a combined interest of \$10,000, the stock to be paid for by their manufacture of 650 chassis. In 1916 they won an action against Mr. Ford to restrain him from what they considered misuse of the company's profits.

A few years ago the brothers gained a rapid success in the manufacture of the Dodge car. They were popular with the 18,000 men who worked for them; the day after the death of John Dodge the organization paid him the tribute of breaking all production records for the plant.

TRUCKS DUE FOR BACK SEAT AT LOS ANGELES SHOW.

Los Angeles will hold a motor show from Dec. 11 to 20 inclusive. It has been agreed to limit motor car and truck exhibitors to association members. Accessory dealers who are not members will be sold space at the rate of \$1 a foot, and it is the intention to make the show the most elaborate that has ever been seen on the coast.

Truck dealers are opposed to segregating the truck show, as is planned, and say that a show of trucks exclusively will not be patronized to any great extent. They object to paying for the exhibition on the same rating that the passenger car dealers are assessed.

TRUCKS AND WAREHOUSES TO SOLVE NEW YORK'S DISTRIBUTION PROBLEM

Col. Charles Hine, special agent of the Erie railroad, addressed the American Society of Civil Engineers in New York city recently and declared that the distribution of freight and food products in the metropolis after their arrival from all points of the compass is "crude, unscientific, expensive and wasteful."

The speaker urged that the greatest possibilities for remedying this condition lie in expediting the short haul in small workable units and in prodigious expansion of storage facilities. His plans call for segregated groups of warehouses and market warehouses throughout the city.

In this connection he pointed out that demountable motor bodies now in successful use in Cincinnati and other proposed devices make it feasible for long haul carriers to have numerous off-line freight station warehouses entirely disconnected except by streets from existing terminal property.

TRUCK TIRE REDUCTION.

Announcement is made by President E. F. Jones of the Republic Rubber Corporation of Youngstown, O., of a reduction in price of Republic tires, grand cord and fabric pneumatic tires and tubes and solid and pneumatic truck tires to meet present market conditions.

SHOE INDUSTRY FINDS TRUCK MOST ECONOMICAL HAULER



White Trucks Employed by the George E. Keith Co., Brockton, Mass., Maker of Walk-Over Shoes, in Getting Its Product to Market.

TEN PER CENT. of all shoes manufactured in Brockton are sent to Boston for export and distribution. During the latter part of 1917 20 freight cars with a total capacity of 200 tons were allotted daily by the railroads to handle this business. At the present time rail shipments to the larger city have dwindled almost to the vanishing point. The reason for this change is not hard to find. Economy, ever following the dollar trail, has demanded lower priced transportation, and the motor truck has answered the call. It has furnished the manufacturer with speedy and inexpensive haulage, and is taking an increasingly important part in the business life of the largest shoe city in the world.

There is perhaps no great industry that functions at a higher degree of efficiency than does that of shoe manufacturing. Each operation of construction is so planned that the maximum output is gained by the minimum effort. Labor is highly paid and materials are expensive.

The percentage of profit is comparatively small, and economic features are carefully combined to produce a high-grade product at a low price. With this in mind, one assumes that motor trucks are used because they move freight at a rate lower than that charged by the railroad. And this is true. The railroad charge is 42 cents a hundred, and the public truck man does the work for 30 cents, while motor haulers owned by the different manufacturers do the work at an average cost of 20 cents a hundred. In the case of freight shipped by rail there is an additional charge of approximately 10 cents a hundred for teaming at each end of the route, and it therefore appears that the commercial vehicle does the work for less than half the amount charged by the steam road.

Furthermore, and much to be considered, is the fact that the truck, with a good road through the Blue Hills, makes the 20-mile run between the two cities in less than two hours with a capacity

load, which is much quicker than the fastest railroad time. The saving of time and money is obvious.

Depend on Truck for Short Hauls.

Practically all of the larger shoe manufacturers have come to realize the value of the truck, and with not more than two exceptions, operate their own fleets, depending on public trucking companies for only about 20 per cent. of the gross business done.

The largest user is the George E. Keith Co., makers of Walk-Over shoes. This concern has three four-ton Whites, one three-ton White and a five-ton Packard, which are used in road hauling, and a three-ton Duplex four-wheel drive and a three-ton F. W. D., both of which are used in the company's box factories.

Carlton R. Blades is traffic manager for the organization. He is a firm believer in the motor truck, and has figures to show that the machines paid for themselves the first year in the saving of money that would have otherwise gone to the railroad. With conditions in the shoe business decidedly bad at the present time, these trucks are moving an average of about 1000 tons of freight monthly, at a cost to the company of about 20 cents a hundred. During 1918 the freight moved in this manner totaled about 100 tons a day, and for short spaces of time reached a higher peak.

This company manufactures all of its own shoe parts, such as heels, counters, box toes, shanks and rands, and the trucks distribute these supplies from the Brockton warehouses and factories to branch plants at East Weymouth, South Boston and North Adams, as well as to the retail stores operated by the company in the vicinity of Boston. They return with not only finished products, but also load with leather, linings and other materials used by the factories which manufacture the parts, which have come into Boston by rail and water from the different parts of the country. It will be seen that they operate with a load prac-

tically all of the time and this of course is desirable.

Small Trucks Assemble Loads.

The South Boston factory has a general freight receiving station where all rail and water shipments are invoiced and distributed. These goods are picked up by Ford ton trucks, which make the rounds of the different terminals.

In speaking of the service given by the trucks over which he has charge, Mr. Blades commended all of them very highly, and said they had always given excellent satisfaction. All repairs are made by employees, and three mechanics handle all of this work. The Duplex carries five tons of box boards, and tows a trailer loaded with a like amount.

The traffic manager inclines strongly to the use of the trailer for general hauling, and plans to use more of them when trade conditions show a bit more color.

He also believes in the future of electric trucks for yard haulage, and has been using two small ones since 1907 with good results. He plans to replace 10 horses still used at the different factories with trucks of this type in the spring, and being somewhat of a statistician, has figures to show that they will do his work cheaper than the animals.

W. L. Douglas Does Own Trucking.

The W. L. Douglas Co. is another shoe manufacturing concern that does about all of its own hauling, depending very little on the public trucker. This company has three five-ton Pierce-Arrows, and two three-quarter-ton Reos, and keeps them busy a good part of the time. Its method of handling traffic is similar to that employed by the Keith company, and it figures operating costs at about the same average.

During the railroad tie-up of last spring it supplied its New York stores with much needed merchandise, and also stocked other stores throughout New England by motor truck. This concern sends trucks into New Hampshire very often, and covers a somewhat wider radius than do other manufacturers.

Other Shoe Builders Use Trucks.

The M. A. Packard Shoe Co., another large manufacturer, employs one five-ton Pierce-Arrow in its business, and does about 80 per cent. of its own trucking, depending on local truckers for the balance. The L. Q. White Shoe Co., another convert to the use of the motor hauler, has a five and a three-ton White, and a one-ton Ford and handles about 95 per cent. of its own haulage.

A three-ton Selden serves the T. D. Barry Co. for about 85 per cent. of all its own trucking, and the E. E. Taylor Co., with a five and a three-ton White truck, does about one-third of its business and will do more as time goes on. The Emerson Shoe Co. has a five and a three-ton Pierce-Arrow, and a three-quarter-ton Reo, and does about 95 per cent. of its trucking, and the Brockton Heel Co., with three five-ton Whites, and a three-quarter-ton White, does about the same amount. The Puritan Counter Co. hauls with a five-ton White and a three-ton Triangle, and depends very little on the local trucking companies. In addition to those mentioned, there are several smaller shoe factories, and three or four manufacturers of shoe findings, which also operate trucks.

Public Truckers Well Equipped.

The express business in Brockton is well taken care of by several good sized companies, all of which operate trucks. The Brockton Transportation Co. is the largest, and does a great amount of the shoe business done by the manufacturer.

This firm has a large fleet of well cared for trucks, comprising 16 five-ton Whites, four two-ton Autocars, one three-ton Peerless and a three-ton Mack, all of which are kept busy a good part of the time.

Harold E. Morse, general manager of the company, has worked hard to establish the business, and although it has been in operation but three years under the present regime, the results are noteworthy.

The headquarters are on North Montello street, in a large fireproof building about 100 by 200 feet in diameter.

The main offices are on the upper floors, while the lower floor of the structure is given over to the distributor's office, from which the trucks are assigned to the different jobs. The loading platform is directly in back of the office, and the garage and blacksmith shop is in the rear. The loading platform is ingeniously laid out with space on one side for the teams which pick up small lots of merchandise, and the other for loading the trucks. Platform levels make handling of freight easy, and there is no lifting, the tailboard of the truck being at the level of the floor. A large platform scale of the automatic type occupies the middle of the floor, as all goods are charged for by weight, and the entire structure can be opened to the air by means of wide doors which hoist up against the ceiling.

Service Station Handles Repairs.

The service station and garage owned by the company is well equipped, and four mechanics and two blacksmiths keep the trucks in working order, the 22 chauffeurs employed by the firm not being required to do any work on the cars.

Mr. Morse believes that a trucking company cannot be effectively conducted without a good repair shop, and figures show that he would lose much of the profit now made if he had to depend on outside service stations.

This service station, according to Mr. Morse's estimate saves more than 60 per cent. on repair bills, and the time saved is also a very important factor. It is well fitted with labor saving machinery and contains, beside small tool equipment, a 150-ton Boomer & Boschert tire press, a 20-ton Weaver arbor press, a 10-ton Chicholm & Moor overhead track, a West Haven power hack saw and a Flather horizontal lathe.

All of the machines are electrically operated, as is the forge in the rear of the shop at which certain parts for the trucks are made. The service station carries a fair supply of parts for the machines, although with so many trucks going into Boston, spare parts are easily obtained, and thus the expense of car-

rying any large stock is done away with.

The shop is run in a practical way throughout. There is no special system followed, and no set rules for any operation. The main idea is to get the disabled truck running just as soon as possible, and the entire shop is conducted with this in view.

All chauffeurs in Brockton are unionized and are paid a weekly wage of \$32 for 48 hours, all other work being done at an overtime rate. It is easy to see that the pay roll of this company is very high, and the service station not only helps to offset this, but gives rush service as well.

Specializes in Emergency Hauling.

The firm specializes in emergency hauling, and on the occasion of the writer's visit had five "rush orders" for Boston despite the slackness of general conditions. Three of the jobs, using five trucks, had been sent away, and the manager had obtained return loads for them. In the course of another half hour he had fixed up the other two trucks with return loads for local merchants, and after notifying his Boston office, turned from the telephone. He had hardly got seated when the insistent jangle of the 'phone again called him. A Brockton wholesaler wanted five tons of raisens brought from Boston and distributed in the local city to retailers. He was assured that the trucks would be at the Boston warehouse in three hours at the longest. By using the telephone again Mr. Morse got a load of machinery for Boston, and the truck was thus loaded both ways.

"It is absolutely necessary to get as much round trip business as possible," said Mr. Morse as he again turned away from the telephone with which he had been giving orders to the down stairs office. "It is unfortunate that about 50 per cent. of all publicly and privately owned trucks go to Boston empty. With 90 per cent. of all finished shoes loaded for direct rail shipment to western and southern points, the amount of outgoing truck business is much less than the incoming."

The following table was taken at random from the files of a shoe manufacturing company in Brockton. The figures given are from the 12th month to the 24th. It will be noted that depreciation is figured so that the cost of the machine, \$6,000, is written off in two years. Inasmuch as the truck looks good for several years work, the actual cost of moving freight by the truck is lower than here figured. All hauling by this truck is between Brockton and Boston, and the railroad figures given apply between these points.

	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
Interest	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$360.00
Depreciation	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	3000.00
Registration	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	50.00
State tax	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	120.00
Gas and oil	107.10	112.10	111.40	112.10	120.10	119.40	117.00	113.10	111.40	109.10	109.80	106.40	1,349.00
Repairs				116.40		96.10			50.40		99.80		362.70
Tires	64.00	64.00	64.00	64.00	64.00	64.00	64.00	64.00	64.00	64.00	64.00	64.00	768.00
Chauffeur	136.00	136.00	136.00	136.00	136.00	136.00	136.00	136.00	136.00	136.00	136.00	136.00	1,632.00
Helpers	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	1,020.00
Garage	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	216.00
Totals	\$704.27	\$709.27	\$708.57	\$825.67	\$717.27	\$812.67	\$714.17	\$710.27	\$758.97	\$706.27	\$806.77	\$703.57	\$8,877.70
Tons hauled	210	210	230	215	200	160	190	150	160	165	180	190	2,260

*Average first and second class freight charge on railroad per ton	\$7.75
*Average first and second class freight charge on railroad per cwt. ....	.387
*(Above does not take into account haulage charges on each end of run.)	
Average cost when truck was used (figured from table) per ton	4.01
Average cost when truck was used (figured from table) per cwt. ....	.2005
Railroad charge for hauling 2,210 tons mixed freight would be	\$17,127.50
Cost to manufacturer for same amount of hauling by truck	8,883.70

Money saved by using truck

\$8,243.80

"We always make every effort to assure loads both ways, and are successful in about 75 cases out of a hundred. The time has gone when business will come by waiting, and the successful man has to hustle to get his share. With business showing a slump, I work harder than ever, and as a result have been able to do nearly as much as formerly," and a glance at the busy office caused one to believe that he spoke truthfully. This firm averages better than 100 tons of freight a day even with business as it is, and during the war, when one firm alone was manufacturing more than 25 tons of army shoes a day, and others were doing a corresponding business, had a standing contract to haul 186 tons of leather a day, for nearly three weeks.

Other Trucking Companies.

Other trucking firms well equipped to do business are as follows: McRae & Ouderkirk, 7 White trucks, ranging in capacity from three to five tons; Lyon's Express, one five-ton Pierce-Arrow, one three-quarter-ton Reo, one three-quarter-ton White, two five-ton Whites; J. J. Papineau, one five-ton White, one 2½-ton Acme; J. J. Gallante, one five-ton White; Shoe City Express, one five-ton White, three five-ton Denbys, a one-ton and 3½-ton Stewart, one 1½-ton Standard, a 2½-ton Packard, two one-ton Oldsmobiles, one 2½-ton International, two smaller Internationals and one Maxwell with a one-ton capacity; Brady's Express, one two-ton Acme and a three-quarter-ton Oldsmobile; Brockton Auto Express, one two-ton Packard, one two-ton Autocar, a 1½-ton G. M. C. and one 3½-ton Northway.

All of these firms do general trucking and handle such shoe business as is available. Much of this trucking is done by contract, and rates as low as 20 cents a hundred are mentioned, but the average price is 30 cents a hundred, whether by contract or otherwise.

As is usual in any city there are certain cut-rate truckers who do much to



Four of the 16 White Trucks in Service with the Brockton Transportation Co., Big Shoe Hauling Concern.

make business bad for the others, and with Brockton the strongest eastern city for unionized labor, it seems as though it would be a good plan for the newly organized Brockton Truck Owners' association to apply some of the labor union ideas to standardizing prices, but as the new society was formed the sole purpose of clearing the road between Boston and Brockton of snow, it is not probable that any definite plans will be made towards regulating the trucking business.

Shoes Easy to Load.

All shoes for domestic shipment are packed for the most part in fiber cases, 24 pairs to the package, the weight of which is about 80 pounds. Export trade demands that wooden cases be used with iron bound corners, which weigh about 100 pounds, and are packed 30 pairs to the case. These packages are easily handled by the trucks, many of which have specially built bodies.

Better Business Coming.

It is generally thought by men who have been long in the shoe business that the present low level of the industry is only temporary, and the first of the year will see conditions considerably bright-

er. Materials have sharply decreased in price and the supply is good. More shoes have been consumed in the last six months than have been manufactured, and the turning point has been reached. The W. L. Douglas Shoe Co. has announced, through H. L. Tinkham, treasurer, that the firm will start manufacturing 10,000 pairs of shoes daily on Jan. 1, and other large manufacturers have similar plans formulating. All of which will mean much to the public trucking companies.

The motor transportation industry in Brockton has reached a high degree of development. As high, perhaps, as in any city in the country. True, the good roads have helped to make this possible, and the large volume of easily handled business has also been a factor, but, however the result has been attained, the fact remains that Brockton is one of the very few cities where trucking rates are lower than railroad rates. Efficient management has done much to bring about this condition, which demonstrates beyond argument the practical worth of the motor truck from an economic standpoint.

It will be seen that the figures on this page present a higher haulage cost than the one on the foregoing page. This is accounted for by the fact that the operator, a small trucking company, did not have so much return load business as did the manufacturer.

It will also be noted that this table shows figures which write off the cost of the truck in three years, whereas in the other table it was charged off in two years. These figures are for a truck costing \$5,500. All hauling by this truck is between Brockton and Boston, and the railroad figures given apply between these points.

	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Total
Tires						401					379		\$780
Repairs	\$101		35			196			27			8	367
Tax	104												104
Gasoline and oil	115	119	116	101	107	68	119	104	107	111	101	39	1,207
Registration	50												50
Depreciation	153	153	153	153	153	153	153	153	153	153	153	153	1,836
Interest	28	28	28	28	28	28	28	28	28	28	28	28	336
Labor	210	210	210	210	210	210	210	210	210	210	210	210	2,520
Garage	20	20	20	20	20	20	20	20	20	20	20	20	240
													\$7,440
Tons moved.....	110	120	130	115	125	55	140	150	155	135	105	65	T ¹ 1,405
Haulage cost per ton.....													\$5.29
Haulage cost per cwt.....													.26
Average charge by trucker per ton.....													6.60
Average charge by trucker per cwt.....													.33
Railroad charge per ton for mixed freight													7.75
Saving per ton by customer.....													1.15
Net profit per ton to trucker.....													1.31
Railroad charge for hauling 1,405 tons mixed freight.....													\$10,888.75
Charged by trucker to haul 1,405 tons.....													\$9,273.00
Customer saved.....													\$1,615.75
Cost trucker to haul 1,405 tons.....													\$7,440.00
Net yearly profit from truck.....													\$1,833.00

SILVER LININGS TO BUSINESS CLOUDS

U. S. TRUCK CO. HEAD FORECASTS RECORD BUSINESS IN 1921

"More trucks will be sold next year than ever before."

The author is not a soap box orator addressing a mongrel street corner audience. He is one of the biggest men in the automotive industry, Forrest J. Alvin, general manager of the United States Motor Truck Co., Cincinnati, O., and his remark was part of an address read (because of his unavoidable absence) before the South Carolina Dealers' association at Columbia, Dec. 10.

"There is nothing wrong with the automotive industry," declared Mr. Alvin. "More trucks will be sold next year than ever before. The man who expects a great volume of business to fall into his lap is destined to whine, just as he is whining now; but the man or company that does not lie or misrepresent, and that properly supervises the customer after he is sold, is going to do a splendid business."

The automotive industry, however, has reached a point where calm, deliberate judgment is necessary, according to Mr. Alvin. He made the point that the truck is fully as essential as the telephone, telegraph and railroad, and also took occasion to predict that the good roads movement would go forward on a larger scale than ever before.

"Fly-by-nights and those whose business is not founded on the rock of fairness are certain to suffer; others have nothing whatever to fear. We ourselves are preparing to double our business in 1921," Mr. Alvin said.

NAPOLEON EXPANSION PLANS.

The Napoleon Motors Co., Traverse City, Mich., is making plans to go ahead on a vaster scale than ever before. Factory space has been increased as well as factory efficiency. Sales territories will be augmented and distributors are to be appointed at many points where there were none before, due to the inability of the company to take care of the business.

GMC PLANT RESUMES.

The General Motors Truck plant at Pontiac, Mich., has resumed operations after four weeks of idleness. About half of the regular force of workers are employed on a production schedule which calls for an output of 400 trucks between Dec. 13 and 31.

Orders for 388,000 tons of steel rails have been placed or are about to be given by the railroads entering Pittsburgh. At the prevailing rate of \$47 a ton the orders will total \$18,236,000. Recent cuts in the price of steel are sure to help bring a boon in this industry.

INDUSTRIAL SLOW-UP HEALTHFUL SAYS CHARLES M. SCHWAB.

That the existing slump in business is merely the natural transition of industries returning to a normal basis from the speeding up of production, made necessary by the war, is the opinion of Charles M. Schwab, chairman of the board of directors of the Bethlehem Steel Corporation, who recently spoke at the annual meeting of the Pennsylvania society.

Mr. Schwab feels that the conditions through which the country is passing is healthy for American business in general, and is bound to have a stabilizing effect. Commenting on the status of unemployed, he said that the crying need of the country was to work and save, which advice, he said, applies to men of means as well as the workingman.

LOOKING UPWARD.

A definite sign of the bettering of conditions in the automobile industry comes in the announcement by F. A. Seiberling, president of the Goodyear Tire & Rubber Co., that sales for the first two weeks in December increased 42 per cent. to dealers and 76 per cent. to manufacturers over the first half of November.

BIGGER HARVESTER OUTPUT.

Cyrus McCormick, Jr., works manager of the automotive division of the International Harvester Co., held a two-day conference with the manufacturing, advertising and sales departments of the Akron, O., works of that company.

Truck sales were discussed and plans for increasing production at Akron, Fort Wayne, Ind., and Springfield, O., were also made.

ITALY OPEN TO TRUCKS.

The Italian restrictions on the importation of motor trucks into that country have been lifted. This information is contained in a cablegram from Commercial Attache H. C. MacLean at Rome to the Bureau of Foreign and Domestic Commerce.

FEDERAL ON FULL TIME.

The Federal Motor Truck Co., Detroit, Mich., is operating its factory in Detroit on a full time schedule according to an announcement made by M. L. Pulcher, vice president and general manager. The company is making every preparation for a record output during the coming year.

BIG MILBURN ORDER.

The Milburn Wagon Co. has opened plants in Toledo to begin work on a \$12,000,000 order for bodies for the General Motors Oldsmobile division. Deliveries have begun.

\$100,000,000 GOODYEAR RE-ORGANIZATION PLAN; \$50,000,000 ISSUE

According to F. A. Seiberling, president of the Goodyear Tire and Rubber Co., a plan for the reorganization of the company is to be submitted to the stockholders on Dec. 24. The reorganized company will have an authorized capitalization of \$100,000,000 of seven per cent. preferred stock, with the rights and privileges of the present preferred, par value \$100. The common stock is not to exceed 1,500,000 shares of no par value. Stockholders will be asked to authorize 25-year eight per cent. bonds or notes not to exceed \$50,000,000.

SEWELL SALES EXPANSION.

Sewell Cushion Wheel Co., Detroit, Mich., manufacturers of Resilient Motor Truck wheels, announces the appointment of the following distributors: Marriott-Howe Tire Co., Mobile, Ala.; Rubber Tire & Supply Co., Springfield, Mo.; F. A. Thompson, Hutchinson, Kansas; M. H. Rykowski, New Orleans, La.; Habbie Motor Co., Montgomery, Ala.; Baldwin Repair Co., Middletown, Conn.; A. F. Greene Co., Norwich, Conn.; Bee Jay Tire Service, Davenport, Ia.; Lampher Motor Co., Joplin, Mo.; Gibbs Machinery Co., Columbia, S. C.; Gibbs & Williams, Salt Lake City, Utah; Peoria Tire & Vulcanizing Co., Peoria, Ill.; O. F. Kress Co., Lawrence, Mass. Further sales expansion is already under way for 1921.

USUAL WHITE DIVIDEND.

Official denial is made by President White of the White Motors Co. of the statement credited to a responsible interest in the company that the next quarterly dividend on the stock would be reduced and that wages and working hours would be curtailed after Jan. 1.

He said it is the desire and expectation of the management to continue the uninterrupted regularity of its dividends on the present basis and added that earnings as reflected on the surplus are quite sufficient to make this policy permissible during the ensuing year.

BIGGER OSHKOSH OUTPUT.

The Oshkosh Motor Truck Co., Oshkosh, Wis., will move into a new plant this month, which will give it a possible production of five a day, as compared to the present limit of one a day.

MORE WALTER CAPITAL.

Having increased its capital stock to \$1,000,000 to permit of increased production, the Walter Motor Truck Corporation, New York, is building a new plant at Poughkeepsie, which will start manufacturing in January.

ALL-PURPOSE BODY AND VESTIBULE CAB

The H. H. Babcock Co., Watertown, N. Y., with sales and distributing offices at 1123 Commonwealth avenue, Boston, Mass., carrying in stock a full line of Babcock bodies for the New England trade, is showing a new all-purpose body known as stock 62-R, which embodies many desirable features of interest to intending truck purchasers or present truck owners. This type of body is fitted with a rack six feet high, with the sides built in three sections as follows:

The lower side panels are 12 inches high, the front end gate is 30 inches high, fitted with slats above. Tail gate is 24 inches high, lined with sheet metal and fitted with pipe rod and strap hinges. A heavy chain extends across the top of the tail gate of sufficient length to double back to allow for drop of gate. The top is equipped with four tarpaulin bows that are removable while the body is reinforced and heavily ironed at all points of stress. This equipment is built with a loading space of 10 feet six inches by six feet, 12 feet by six feet, or 13 feet six inches by six feet two inches.

All Babcock bodies are of special steel platform construction, which is a patented feature, making these bodies unusually durable when used in rough work.

Another new feature which the Babcock company is showing at the present time is the new Universal Vestibule Cab, which is fitted with a special adjustable seat, which is made to raise or lower and slide forward or backward as desired. This is of special value to the driver, as he is able to regulate the seat to his satisfaction with relation to the distance between the steering wheel and the seat. Springs are placed in the seat cushion and also in the back, which is a decided improvement over the solid back usually provided.

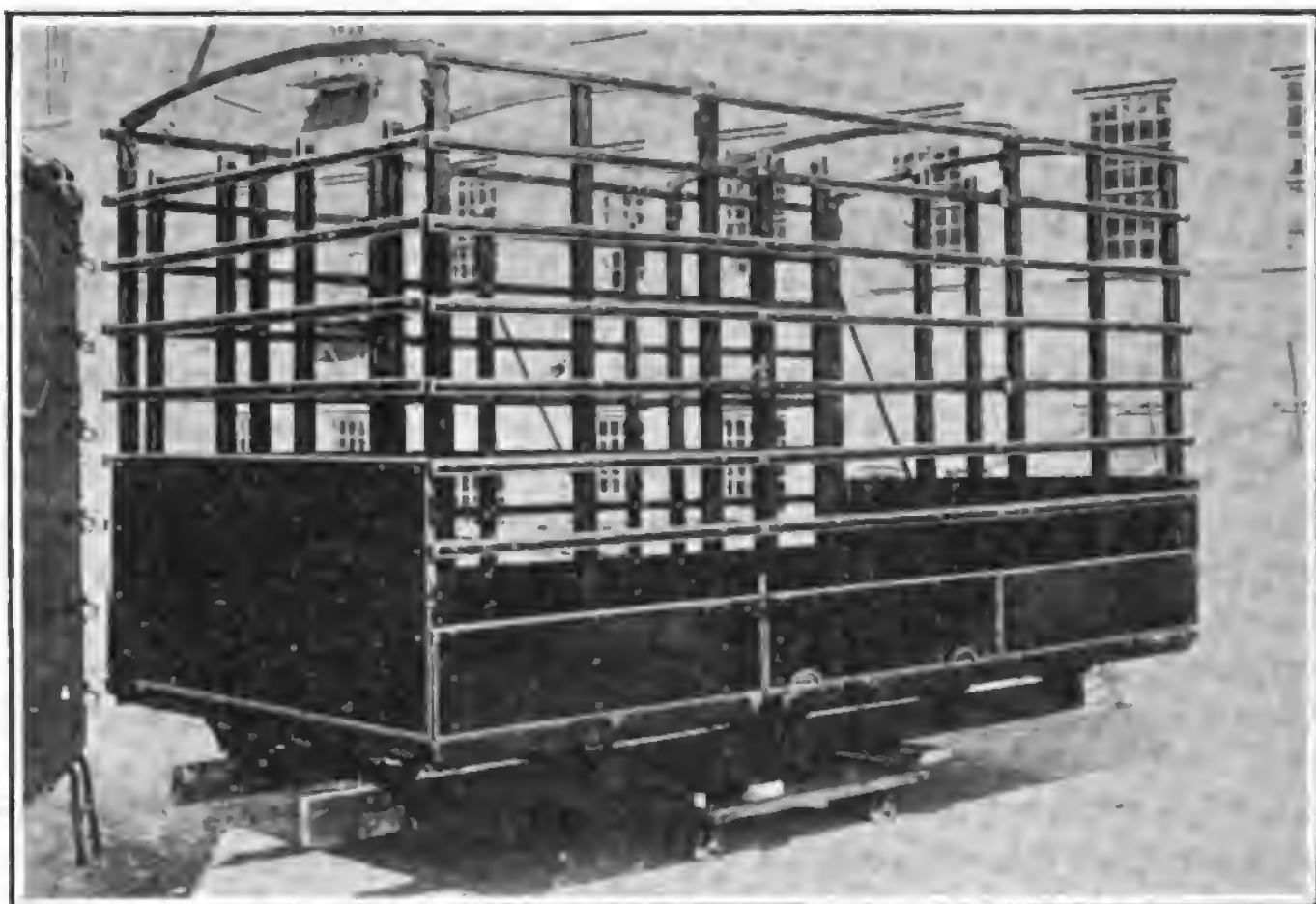
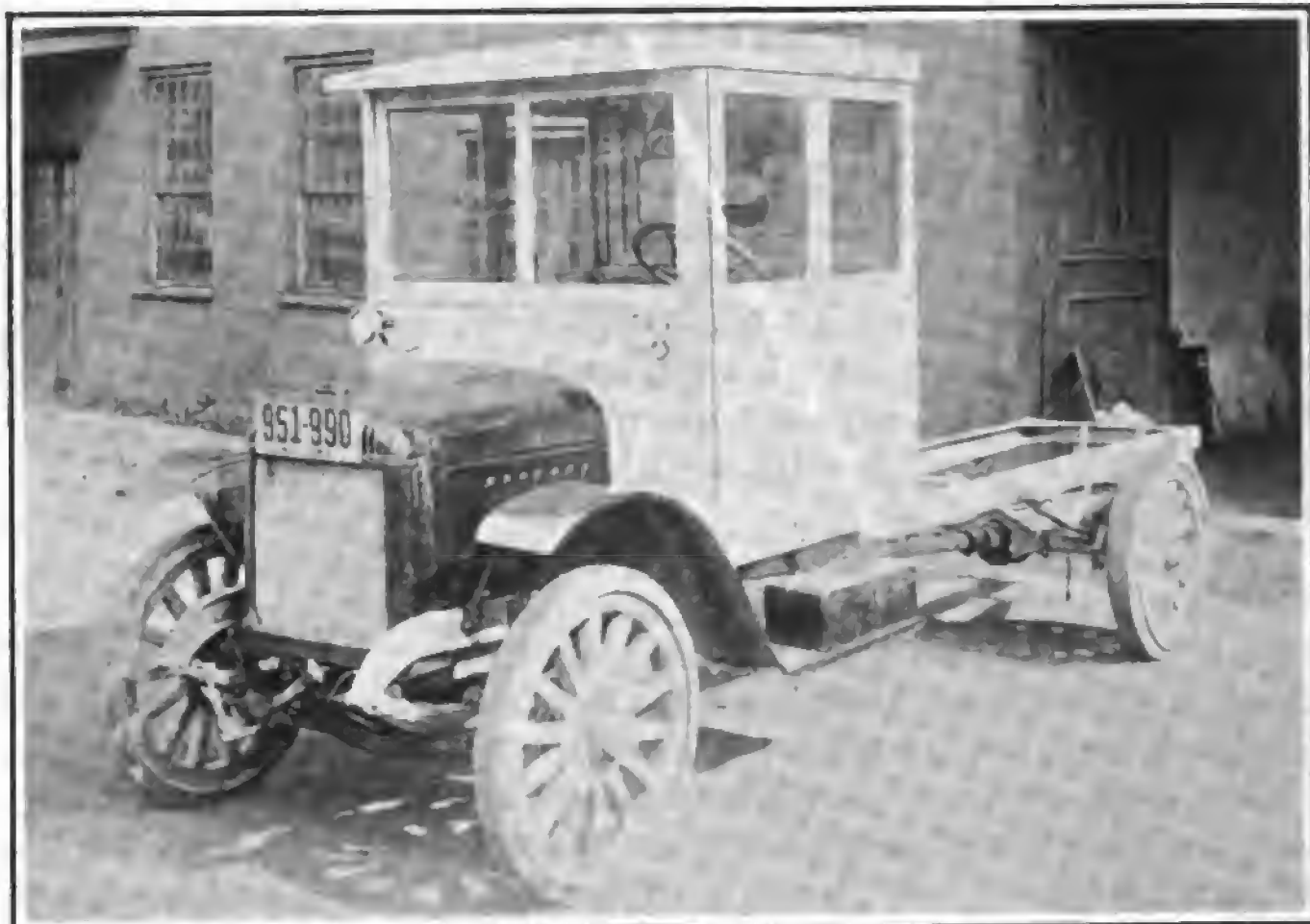
A one-piece double ventilating windshield fitted in steel slides allows open-

ing the windshield to any angle or to be raised flat against the roof, as shown in accompanying cut. The shield is hung on universal joints, which make it absolutely tight when closed, lessening the possibility of breaking the glass.

The front pillars and cross bar of the cab are made of angle steel with a 14-gauge steel panel set in. This panel when attached to the truck dash is flexible enough to overcome the twist and weave of the chassis.

The upper rear panel is equipped with two large windows, made to swing up against the roof on a specially constructed spring slide.

The doors are made in two sections, the lower section being steel paneled inside and out, built especially for hard usage. The upper section has a full depth window, which swings back and is fastened against the quarter window. Provision is also made for removing the quarter window and the upper section during hot weather, leaving the sides of the cab open.



Above is the Universal Vestibule Cab—Below is Depleted the All-Purpose Body—Both are products of H. H. Babcock Co., Watertown, N. Y., and have many special features.

The roof has a heavy wood frame, slatted and covered with heavy oiled duck, banded on the edge with steel molding. This cab fits any chassis with frame not over 35½ inches wide.

KELLY-SPRINGFIELD TRUCK PRICE REDUCED.

The Hare's Motors policy of meeting the spirit of the times and doing everything within its power to hasten a return to normal business conditions is reflected in its latest step, which is a reduction of from \$100 to \$400 in the prices of the various Kelly-Springfield truck models. The reduction is based on an anticipated cut in the cost of manufacturing.

The new prices on chassis, f. o. b. Springfield, O., will take effect immediately and are as follows:

	Old Price	New Price
1½-ton size.....	\$3000	\$2900
2½-ton size.....	3500	3250
3½-ton size.....	4650	4200
5-ton size.....	5150	4900
6-ton size.....	5500	5100

ALL-AMERICAN O. K.

The All-American Truck Co., for which a receiver had been asked, had the petition dismissed in the United States District Court at Chicago recently. Local banking interests have furnished additional working capital, it was stated, and the assets of the company show a half million over the liabilities.

INDUSTRY'S BIG BURDEN.

If the suggestions of Secretary Houston were carried out the automobile industry would be asked to pay more than 10 per cent. of the nation's estimated tax budget, which is \$4,000,000,000. It would require the industry to pay in direct class taxation a sum equivalent to one-half of the national budget in the year preceding the war.

NAPOLEONIC CONFIDENCE.

W. G. Rath, vice president and general manager of Napoleon Motors Co., Traverse City, Mich., has never been pessimistic with regard to the industry. "We of the Napoleon company," says Mr. Rath, "have patiently awaited the swing of the pendulum, knowing full well that its upward swing was not far off. There has been a decided note of confidence recently in our correspondence received from dealers and distributors, and I personally believe that the peak has been reached and that improvement will be steady during the coming three months. This improvement will be so steady that it will place us in normal production on or about March 1. So thoroughly set in their opinion are the officials of the Napoleon company that they are making their arrangements accordingly."

WHO'S WHO ON SALES FIRING LINE

ADVISORY COUNCIL MEETS AT SELDEN FACTORY.

Early last summer the Selden Truck Corporation, Rochester, N. Y., announced that an advisory council would be formed, consisting of one man to be elected from each of 11 districts that their opinions and suggestions might be secured at regular meetings to be held in Rochester.

The first meeting was held Dec. 6 and 7. The expense incurred by the representatives was defrayed by Selden and they were royally entertained after the business had been conducted.

The first advisory council is composed of the following men: J. C. Conley, Boston, Mass.; G. E. Stewart, New York City; H. A. Rayno, Albany, N. Y.; J. L. Costella, Pittsburgh, Pa.; R. D. Godwin, Norfolk, Va.; W. H. White, Atlanta, Ga.; J. G. Mathias, Cincinnati, O.; J. R. Carnahan, Chicago, Ill.; W. L. Campbell, Wichita, Kan.; W. W. Grosser, Houston, Tex.; K. Nakagawa, Los Angeles, Cal.

SERVICE REPRESENTATIVE.

L. H. Amrine, who has been vice president and manager of the Soudder Motor Truck Co., 3950 Laclede avenue, St. Louis, has gone to the Service truck factory to act as special representative for the Service Truck Corporation through the East for the next three or four months. Mr. Amrine is chairman of the Commercial Car Bureau of the St. Louis Automobile Manufacturers' and Dealers' association. Henry Palne, an experienced automobile man, has been made manager of the Scudder motor truck business.

MAGUIRE WITH HARE'S.

Appointed as special representative of the Hare Motors Corporation, Peter W. Maguire, formerly treasurer of the Kelly-Springfield Motor Truck Co., Springfield, O., has left for New York. He will assist in the consolidation of the retail sales outlets of the Kelly company and the Hare corporation.

PLAGE SERVICE DISTRIBUTION HEAD IN KANSAS CITY.

The Service Truck Co. of Kansas City has been reorganized with B. W. Plage, for several years district manager of the company, as president; L. H. Henschel as vice president and Ralph Stalnaker as secretary-treasurer. William C. Weaver is general manager.

LEVY WITH INDIANA.

Edward Levy, Jr., formerly sales manager for the Standard Truck Co., in Pittsburgh, has become sales manager of the retail department of the Indiana motor truck department of the Auto Trading Co. of that city.



"What does the truck market need most today," we asked O. M. Vett.

The old time salesman didn't skid.

He had his answer at his tongue's tip.

"Intensive selling methods," was his reply.

We wanted to know who those fellows were. They were strangers to us, we told him.

"Yes, and to nearly everybody engaged in distribution work," answered Mr. Vett. "Though strangers now they were once well known in this neighborhood. In fact were known everywhere. They faded out of the picture near the end of the war days. A little lubrication of the human system will get them back."

Then O. M. proceeded to define "intensive selling methods." He dug right into the meat of the matter at once, as is his wont.

"Intensive selling methods," he opined, "are the kind used in selling insurance. The insurance man never misses a prospect. He knows that those who live must die and that about everybody who takes the leap into the beyond leaves somebody behind that insurance will help. The insurance man sees every prospect, even if a house-to-house canvas is necessary.

"The truck dealer knows that every article produced in the factory or field must be transported. Every man who creates anything, in the mill or on the farm, and thousands of their intermediaries, are truck prospects. If insurance selling methods were in vogue every last one of them would be seen and given the message of the truck.

"How small a percentage are seen I am unable to say. I'd be ashamed to show up the distributors by making a guess. I will say, however, that it's mighty small."

MOONEY REMY MANAGER.

O. F. Conklin, president and general manager of the Remy Electric Division of the General Motors Corporation, Anderson, Ind., will hereafter devote all his time to his duties as president, having promoted his former assistant, J. D. Mooney, to the position of general manager.

Claude S. Hyman, until recently advertising manager for the Standard Motor Truck Co., has joined the Charles H. Fuller advertising agency, Chicago.

GEORGE A. MOON IN CHARGE OF NEW ORLEANS DELTA MOTORS CO.

W. L. Snider, president of the Delta Motors Co., distributor of Transport trucks, announces the appointment of George A. Moon, for 20 years in the sales and service of various automobile concerns in Detroit, to the position of manager of the Delta sales and service department, New Orleans, La. It is generally conceded that Mr. Moon has valuable knowledge of the business in general and his reputation as a sales executive is exceptionally high. He has been associated for the last five years with the Liberty Motor Car Co. in Detroit.

FIRESTONE CHANGES.

The Firestone Tire & Rubber Co., Akron, O., is making the necessary changes to conserve cash resources and meet the conditions brought about by the readjustment period. The dividend payable Dec. 30 will be at the rate of six per cent. instead of eight per cent. All salaries were reduced 10 per cent. on Dec. 1, although no change was made in the wage scale now effective in the factory. It was pointed out that salaries were increased 20 per cent. during the year to meet rising living costs and that business requires that these salaries be reduced as living costs are cut.

C. E. DENZER TO DENVER.

C. E. Denzer has been appointed manager of the new White branch to be opened at Denver. Mr. Denzer will have charge of sales, and Thomas Parramore will be in charge of the service department. The Denver branch will be the distribution center for the greater part of the western territory. Mr. Denzer was formerly western branch manager for the same company, with headquarters in Cleveland.

U. S. RUBBER CHANGES.

George W. Selberling has been made general manager of the tire factories of the United States Rubber Co. and Erwin Meyer has been appointed chief consulting chemist. John J. Shea has been made factory manager of the Colt plant Revere Rubber Co., and A. P. Delahunt, chief accountant.

BEST WITH ACASON.

W. R. Best, formerly with the Bankers Commercial Security Co., 14 Wall street, New York, has joined the Acason Motor Truck Co. forces in Detroit as assistant to H. P. Mills, sales manager.

Hare's Motors, Philadelphia, which controls the sale of Riker and Kelly-Springfield trucks, has appointed George R. Eastman manager of the truck department.

THE IMPROVED 1921 RAINIER MODELS

The Rainier Motor Corporation announces numerous improvements and betterments in their new 1921 models, which are now ready.

In the one-ton, now known as the Model R-19, wheelbase has been increased to 133 inches, frame lengthened so that the loading space is 9 feet 6 inches behind the seat and the side rails are now five inches deep. Tire size is enlarged to 34x4 rear and 34x3 front. Other improvements include heavier steering gear, new style pedals and control, and a larger radiator of different shape, greatly enhancing the appearance. Chassis price remains as heretofore, \$2350.

The 1½-ton is now called the Model R-16, and is considerably larger than formerly. Wheelbase has been lengthened to 147 inches, resulting in greater loading space—10 feet 6 inches behind the seat. Frame side rails are heavier and depth increased to six inches. Motor is now the 3¾ Model "E," instead of the 3½ formerly used and the Brown Lipe Model 30 transmission has been substituted instead of the "25." Other changes are heavier steering gear of Ross manufacture, heavier propeller shaft with three universal joints and a center ball bearing, new style pedals and control and a new type of radiator, resulting in

better appearance. Tire sizes have been increased to 34x5 rear, 34x3½ front. Price of chassis, \$2600, instead of \$2450 as before.

The two-ton chassis Model R-18 remains practically as heretofore except that it has a larger motor—Continental 4½ by 5¼, and the Model 35 Brown-Lipe transmission, as well as the new style radiator.

Cords Standard on ¾-Ton.

The ¾-ton Model R-11 will be continued without change except that it now has 35 by 5 cord tires as standard equipment. This is one of the very few worm driven ¾-ton chassis on the market. It has Continental motor, Brown-Lipe clutch and transmission and Timken worm driven rear axle, 125-inch wheelbase. Chassis price, \$2150.

Deliveries will commence this month on the new 3½-ton model, specifications of which are new style Continental motor 4½ by 6. Brown-Lipe clutch and transmission. Model 60 amidships, four speeds; Timken worm driven rear axle, 170-inch wheelbase, eight-inch frame, Ross steering gear, Spicer joints and magneto ignition; rear tires 31 by 5 dual, front 36 by 5 single. Chassis price, \$4500.

An additional model—2½-ton capacity—is in course of production on which de-

liveries will be made about Jan. 1. It will have Continental motor 4½ by 5¼, Brown-Lipe three-speed transmission amidships, Ross steering gear, worm driven rear axle, rear tires 34 by 7, front 34 by 5. This chassis will be made in two size wheel base, 156 inches and 170 inches. Chassis price, \$3400.

FIGHT 10 TON LIMIT LAW FOR CONNECTICUT TRUCKS.

The State of Connecticut has just passed another truck law which is ostensibly framed to aid in keeping the highways in condition, although certain plain spoken individuals intimate that it may have been fathered by the railroad interests. In effect it specifies that from Dec. 1 to May 1 inclusive operators of trucks weighing five tons or more, or where the combined weight of truck and load is in excess of 10 tons, will be refused use of the state highways, unless under special permit, and traveling under certain conditions. It is stated that the 10-ton ban would virtually bar trucks of five-ton model from winter use on state highways, thus dealing a crippling blow at the thriving ship-by-truck industry. Needless to say the new ordinance has met with a storm of disapproval.

JUGGLING A SIX-TON SAFE EASY PROPOSITION FOR A MEAD-MORRISON WINCH

Nine of the 28 motor trucks in the service of C. Bowen, specialist in the transportation of safes, machinery, etc., 51 Sudbury street, Boston, Mass., are equipped with the Mead-Morrison Vertical Capstan Winch, which equipment has proven remarkably satisfactory in this field. The Bowen fleet includes Macks, Whites, Pierce-Arrows, Locomobiles and Autocars.

Mr. Bowen had faith in this particular winch before he used it for the reason that he was one of a number of practical transportation men who was consulted before this aid to haulers was perfected. Mr. Bowen, who had long been identified with the truck industry, and especially with the transportation of heavy articles, gave valuable information as to the type of equipment which best fitted his needs as well as the requirements of all haulers of heavy machinery. These ideas were incorporated in the completed product. That Mr. Bowen has nine of these winches now in daily use is the best proof that his experience has demonstrated the value of the machine in the creation of which he played a part.

It is claimed for this winch that it not only cuts the loading and unloading time, but actually reduces man labor one-half. One use for which it has been a factor of efficiency and economy to the

truck owner is in its capacity to haul the truck itself out of mud holes and ditches.

In addition to its great power the minimum of loading space it requires and other features it has won big favor because it is fitted with an automatic brake, which positively prevents backward turning of the winch head should the driving chain break. When hoisting pianos, safes and other valuable material this device is an essential.

The worm gearing of this winch runs in oil. The winch head is bronze bushed. Its specifications follow: Rope pull, single line, 3500 pounds; rope speed, single line, 60 feet per minute; space required, 22 inches square; weight complete, 350 pounds; winch head, eight inches in diameter and 11 inches in length.

The accompanying illustration shows a five-ton Pierce-Arrow truck of Mr. Bowen's on the job removing one of six

safes, all weighing over six tons. To get these safes out it was necessary to cut out a huge hole in the front wall of the building. The 60-foot shears shown were erected as a measure of safety. It will be noticed that but a small crew of men is engaged in the task.



Mead-Morrison Vertical Capstan Winch Bringing Six-Ton Safe from Second Story to Body of Pierce-Arrow Truck.

DOINGS OF THE DEALER AND DISTRIBUTOR

W. G. TOLAND TO DIRECT KELLY-SPRINGFIELD AND RIKER TRUCK SALES

William G. Toland has been appointed general truck sales manager for Hare's Motors, Inc., and will proceed to strengthen the sales organization for the distribution of Kelly-Springfield and Riker trucks. This announcement has been made by Vice President Henry Landsdale, who is in charge of distribution for Hare's Motors.

Following his school days Mr. Toland had two years of business life on the Coast and then came East. He sold advertising for the New York Herald, was in the ship building business and then became assistant New York manager for the National Cash Register Co., his duties in the latter post being to analyze and develop new fields for his wares.

In 1917 he joined the truck sales organization of the Packard Motor Car Co. of New York, of which E. S. Hare was then president, and was placed in charge of truck sales for the Springfield, Mass., branch of that company. His success led to his promotion to be truck sales manager for the New England territory and to his subsequent transfer to the larger field of the New Jersey district.

Mr. Hare's idea of selling motor freight transportation, rather than merely trucks, found ready acceptance with Mr. Toland and he was one of the most successful of the executives in Packard, New York, in working along that line. He thoroughly believes that an analysis of the prospect's transportation problem is essentially the first step to be followed by intelligent and impartial advice as to its solution and his appointment makes sure that Hare's Motors plan for merchandising trucks will be based on this substantial foundation.

Mr. Toland will make his headquarters at the general office of Hare's Motors, Inc., 16 West 61st street, New York.

"SAY YES" CAMPAIGN GETTING BUSINESS IN PHILADELPHIA.

The "Say Yes" campaign, started Oct. 15 by the Federal Motor Truck Co., is progressing so well in the Philadelphia territory that business has received a considerable impetus, according to Branch Manager William H. Bartleman. The idea is to get prospects lined up for sales and to boost truck transportation, move crops and benefit the industry generally.

NEW VIM HOME IN TAMPA.

The Reagin-Denton Motor Co., Tampa, Fla., has moved from its former location on Franklin street to a new and improved building on Polk street. The main floor of the new home covers an acre of ground. This firm is state agent for the Vim truck.

CARANZA CONCLUDES REIGN BY INSPECTING ACASONS.

It is stated that the last official outdoor act of President Caranza of Mexico previous to losing his job was the in-



spection of a new shipment of American-made trucks, the product of the Acason Motor Truck Co., Detroit, Mich. The accompanying illustration shows the ex-president just after he had finished the inspection of part of the shipment. The trucks were intended for military service, but are now employed for commercial purposes.

A TIP TO TRUCK DEALERS.

The Harley Davidson Sales Co., Providence, R. I., recently gave an example of one way to promote business by carding free motorcycle races for Thanksgiving day and then arranging a mass meeting of motorcyclists for Saturday night, Nov. 27, at which there was a big show for nothing. Mixed in with free eats, free smokes, free drinks, free music and free movies of the Readville races, were motorcycle exhibits, a special exhibit of worn parts and talks by experts on the care of machines. Bad weather killed off the races, but the other event was run off as scheduled. There was a big attendance and the results could not have been achieved with the same outlay of money in any other way.

SANFORD TRUCK OPENS NEW AGENCIES.

The Sanford Motor Truck Co. has made the following new agency appointments: Conrad I. Shutts, Amsterdam, N. Y., and the United Motor Sales Co., Hamilton, Ontario, Canada. The management reports prosperous business throughout the country, and future plans include the opening of other agencies.

NASH AGENCY BUILDING.

Herbert S. Mack, formerly manager for the Nash Motors Co., Topeka, Kan., agents for the Nash car, has taken over the local agency, and will erect a new building to house the agency. He will retain the sales and service organization and will be located temporarily at 1017 Kansas avenue.

WHITE FACTORY BRANCH AT DENVER, COL., TO SERVE SEVERAL STATES

In recognition of the growing importance of Denver as a motor truck distributing center, the White Co., Cleveland, has established a direct factory branch in the Colorado metropolis. The installation and maintenance service heretofore rendered by the White Auto Co., formerly the Denver dealer of the White company, is being highly developed to meet the requirements not only of Denver, but the entire Rocky mountain section. The company has acquired a large and modern building at 18th and Pearl streets to house the new branch.

C. E. Denzer, formerly manager of western sales for the White company, with headquarters in Cleveland, will be manager of the sales department of the new Denver branch, and Thomas Parra-more manager of the service department.

Every facility will be provided to give present and future owners a transportation service of exceptional promptness and efficiency.

The Denver branch will serve the territory embracing Utah, Colorado, the north tier counties of New Mexico, Wyoming, the east half of Montana, the Black Hills territory of South Dakota, Nebraska and the three west tier counties of Iowa.

KANSAS CITY MACK TRUCK BRANCH HAS NEW MANAGER.

Vernon Trevellyan, formerly with the Chicago branch of the Mack Truck Co., has been appointed manager of the Kansas City branch. He will have direct supervision over sales in Kansas, Oklahoma, Missouri and Northwestern Arkansas.

WICHITA DISTRIBUTOR.

The Yielding Motor Co., the latest addition to the automotive industry at Walters, Okla., has opened for business on East Colorado avenue, with the agency for Hudson and Essex cars and Wichita trucks.

DENVER STANDARD AGENCY.

N. D. Beaver has taken over the business of the Standard Motor Sales Co. of Denver, Col., distributor of Standard trucks. He will cover the states of New Mexico, Nebraska, Wyoming and Colorado.

DAY-ELDER REMOVAL.

The Stevens Motor Sales Co. of Chicago, distributors of the Day-Elder truck, has moved to its new building, 211 Michigan avenue.

WAYS TO SHORTEN TIME TRUCKS STAND IN SERVICE STATIONS

From address of A. B. Westman, Service Manager, Acme Motor Truck Co., given at recent Factory Service Managers' Convention at Cleveland.

I believe there is much to be gained for the owners, dealers and truck makers by carrying out a system of truck inspection at regular intervals, preferably once a month. With the proper form and a competent inspector, this inspection would require very little time and would give the owner a complete check on his truck and, incidentally, his driver at frequent periods, as well as giving the dealer a check on the condition of each truck in his territory at all times. This idea is by no means a new one and a great many progressive dealers are now making inspections of this kind and reporting wonderful results.

It is true that some owners, through ignorance or for other reasons, do not take kindly to the system requiring them to bring their trucks to the service station once a month for inspection, necessarily laying them up for perhaps an hour or two, feeling that they cannot be spared even for a short time. However, the case is exactly the same as with the human machine. If the first symptoms of trouble are not promptly recognized it may result in a complete breaking down, requiring extensive repairs and heavy repair costs, and this is very likely to happen when the truck can least be spared or when it is on some long trip far from any repair shop.

There are also, undoubtedly, owners who feel that the dealer making the inspection will make it his business to find something wrong with their trucks in order to get work for his repair shop, and, to overcome this, I would suggest that absolutely no work or repairs of any kind be made at the time of the inspection except of course something which is absolutely necessary and then only after getting in touch with the owner and securing his consent.

Inspection Department Distinct.

This inspection department should be entirely separate from the repair shop and a separate room provided, if possible, and if the number of trucks in the dealer's territory requires a full time inspection department. With this department functioning properly, notices should be sent out to each owner as to just when his truck should be brought in for inspection and, if it is impossible for an owner to bring in a truck at a given time, arrangements should be made indicating just when this truck can be brought in and the service so arranged that the inspection can be made without delay when the truck arrives.

The owner contact gained by the establishment of an inspection service, such as I have outlined, will be invaluable from a sales standpoint. To make a call on each truck owner, monthly, is bound to develop many new truck prospects. This comes as a direct result of

the inspection service. From the sales standpoint there is also an indirect result which is bound to be far reaching in its influence. The owner of a truck which is receiving the monthly inspection service is bound to be in a far happier mood than the owner of a neglected truck.

It is human nature for the owner to boost the truck he is satisfied with as he talks with his friends who also own and operate trucks. This sales aspect alone is sufficient justification for the installation of monthly inspection service.

When the truck is down or actually in need of repairs the owner naturally wants these repairs made with as little delay as possible and has a right to expect that the service station shall be prepared to handle them with reasonable promptness and to put out good work.

Service Station Thoroughly Organized.

To accomplish this it is necessary that the service station, however small, be thoroughly organized.

First, it should be managed by a foreman or service manager thoroughly competent to properly schedule the work through his shop. He should keep thoroughly posted on the condition of his shop at all times and keep informed on the progress being made on each job.

I believe trucks are spending a great deal of time in shops when there is no actual work being done on them. For instance, an owner will want some slight repairs done to his truck. He will call the service station and arrange to bring his truck in the next morning, or perhaps the following Tuesday morning, being assured they will then be able to take care of his job promptly. In the meantime, some unexpected job comes in and this customer, who has made positive arrangements, must wait perhaps anywhere from one-half to two days before his job can be started on. This is entirely up to the foreman or service manager and every promise made should be scrupulously kept if it is humanly possible.

Second, the shop should be equipped with up-to-date tools and labor saving equipment to turn out repair work quickly and accurately.

Good Mechanics Are Needed.

Third, good mechanics. This is perhaps one of the most important elements and most difficult to control.

The automotive industry has for some time been considerably handicapped because of lack of competent mechanics in garages and repair shops, and a great deal of public confidence lost because of some amateur mechanic turning out bad repair work, and it is no unusual thing for such mechanics to suggest to the owner that this, that or the other thing was not made right or put together right

at the factory. With the easing up of labor conditions there are, no doubt, a great many good mechanics, or at least material for good mechanics, released, and I believe the time was never better nor prospects brighter for strengthening the mechanical force of the service station and repair shop than right now.

Fourth, another very important factor in shortening the time trucks spend in service stations is available repair parts. Much valuable time is lost by not carrying a complete stock of repair parts and also by ordering parts by mail when conditions justify ordering by telephone or telegraph and also by not giving complete information with parts order. Every qualified dealer or service station should recognize the necessity of properly keeping up his parts stock and the fallacy of waiting until he is entirely out of certain parts before reordering.

Fifth, considerable discussion has been held on the subject, "unit system of repairs." The value of this system in shortening time trucks spend in service stations would in a great many cases be very great. It has been stated that a fleet owner operating as few as three trucks can well afford to carry spare units. If this is true with the small fleet owner, it should be true to a much greater degree with the service station having perhaps hundreds of trucks of the same model in its territory.

Interchangeability of Units.

In truck manufacture it is not necessary, as it seems to have been in the passenger car field, to bring out new models each year where, in a great many cases, very few units would be interchangeable with the preceding model. Therefore on most good trucks you will find practically no radical change which would affect interchangeability of complete units.

The carrying of complete units in a service station of course represents some investment, but the results gained fully justify the investment. Think of the satisfaction to a customer if his motor suddenly breaks down and a service station is prepared to install a new motor for him in a couple of hours where otherwise it would take days to repair the old unit!

Finally, every repair job should be thoroughly inspected and tested before it is turned over to the owner to make sure that the units repaired have been properly installed and are again working in perfect shape.

If the motor truck industry is going to hold the position it deserves in the nation's transportation system, service to the owner must be very much improved, and all educational work and propaganda carried on along this line is a step in the right direction.

CLARK EQUIPMENT CO. PAINTINGS TO SHOW SPIRIT OF INDUSTRY

Through the enterprise and initiative of the Clark Equipment Co., Buchanan, Mich., visitors to the New York Automobile show, Jan. 8-15, will have an opportunity to see the automotive industry dramatized in a series of 12 paintings entitled, "The Spirit of Transportation." These paintings by the country's leading artists will be on display during the show in the main lobby of the Hotel Commodore. They will be later shown at Chicago and may be seen at the Coplay-Plaza hotel during the Boston show.

The artists, recognized leaders in portrait, landscape, figure, marine, mural, etching and illustrative work, have endeavored in these paintings to awaken a realization that the part the automobile and the motor truck play from now on will vitally affect the progress and development of the world. What they have contributed to civilization will be strikingly shown.

In addition to being well paid the artists are competing for a capital prize of \$1000 and other awards. The artists are:

George Elmer Browe, Jonas Lie, Max Bohm, Maxfield Parrish, Alphonse Mucha, F. Luis Mora, Frank X. Leyendecker, C. Coles Phillips, James Cady Ewell, Franklin Booth, R. F. Heinrich and William Mark Young.

NEW YORK AUTO SHOW.

A total of 88 manufacturers will exhibit 350 passenger cars at the show to be held at the Grand Central Palace, New York city, Jan. 8-15. Of these 10 makes have never before been seen at a New York show. All will be American cars. All records will also be broken as to the number of accessories exhibited. As usual the event will be under the auspices of the National Automobile Chamber of Commerce, Inc.

Truck on Rails

Following the success scored by the Palatine, Lake Zurich and Wauconda railroad, which has had similar equipment operating profitably on a 16-mile run for nearly a year, the New Orleans and Lower Coast Railway has put a railway motor car, with standard FWD truck chassis, into service over a 60-mile route from Algiers to Buras, La.

It is claimed that there are 600 short line railroads in the country which could economically employ this equipment. Instead of a crew of four men one does all the work. A speed of 25 miles an hour is obtained at an average of $7\frac{1}{2}$ to nine miles on a gallon of gasoline, according to the size of the grades, number of turns and frequency of stops. Figures show that the cost of operation is 25 per cent. less than the steam service.

The standard FWD truck chassis has steel flanged wheels instead of the rubber tired ones and a passenger body mounted on the frame. With the exception of the use of the flanged wheels the standard construction of the truck remains the same, the regular motor used in the truck for ordinary hauling requirements furnishing the power.

The special passenger body on the car was built in the New Orleans and Lower Coast workshop and provides seating space for 32 persons. The entrance is from a side folding door on the forward end. The car is also equipped with Master Car Builder coupler and can be used for switching or hauling a trailer.

The starting and lighting system is furnished by a 24-volt single-unit system, which furnishes power for four dome lights, headlight and rear marker lights.

The exhaust gases from the motor are used to heat the car. This is done by means of a take-off which converts the hot gases from their regular channels through a series of pipes running at the sides, making the car as comfortable as any Pullman.

The Pohl Body Co., makers of truck bodies for Fords, has leased a factory site at Kansas City, Mo.

GOODYEAR HEAD DENIES CHARGES IN PETITION FOR RECEIVERSHIP

Following the filing of a suit for receivership of the Goodyear Tire and Rubber Co. of Akron in the Common Pleas Court at Columbus this month by former Ohio Attorney General Frank S. Monnett, as a stockholder, F. A. Seiberling, president of the Goodyear company, issued a statement denying the allegations made by Mr. Monnett.

Goodyear attorneys will resist the suit and seek dismissal of the proceedings before the annual meeting of stockholders, Dec. 24. President Seiberling in replying to the Monnett petition said:

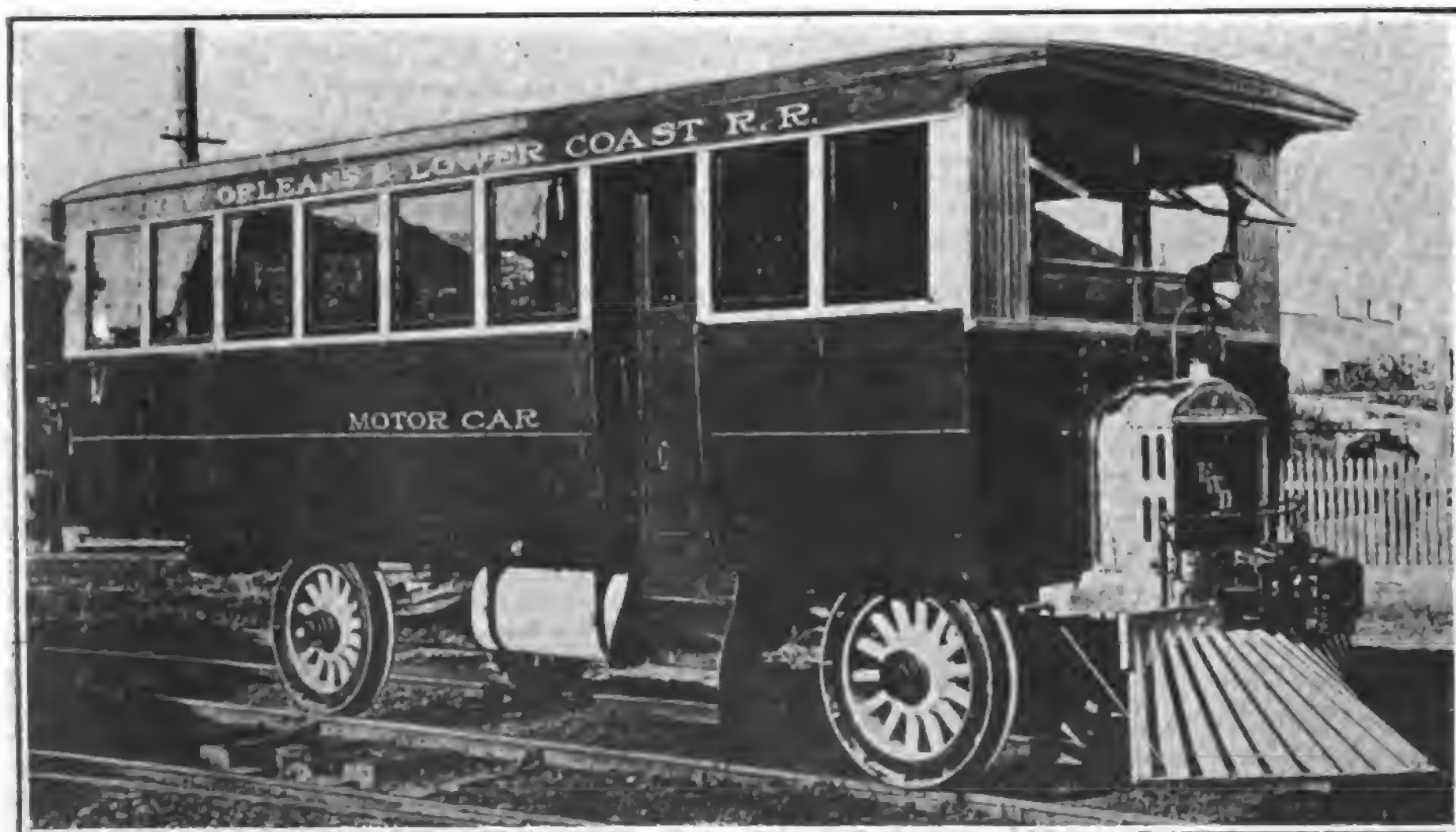
"I have not read Mr. Monnett's petition, but have seen a summary of it in the papers and can say that his allegations are full of misrepresentations and contain scarcely a truthful statement. The claim that the directors of the company have been operating to their personal advantage and to the detriment of the stockholders of the corporation through a company known as the Goodyear Investment Co. is wholly without foundation. No such company now exists or ever did exist. There is a company known as the Goodyear Improvement Co., a subsidiary company, owning warehouses of the Goodyear Tire and Rubber Co. in various cities throughout the United States and Canada. This company is operated wholly for the benefit of the Goodyear Tire and Rubber Co., and all profits that ever accrued to it have come to the Goodyear Tire and Rubber Co. and now belong to it.

"Mr. Monnett's statement that the stock dividend declared in June, 1920, and the quarterly dividend paid on common stock in September of this year were not paid out of surplus earnings is also untrue. In common with all other industrial concerns the country over, the Goodyear Tire and Rubber Co. has suffered by reason of the present business depression. This depression has caused a loss to it, as to these other concerns, by depreciation in its inventories and contracts taken and entered into at the beginning of last fiscal year. I can say, however, that after charging off this entire loss the company still has ample assets with which to pay its indebtedness and to cover its entire issue of preferred stock and still have many millions of dollars for the common stockholder."

MORAN TO CONCORD PLANT.

H. J. Moran, formerly electrical engineer with the International Motor Co., New York city, has been appointed chief engineer and factory manager for the Abbott-Downing Co., Concord, N. H.

The United Automotive Body Co., with executive offices at Springboro, Pa., has leased a warehouse at Lansing, Mich., where it will contract for work with many of the large truck and car companies.



FWD Truck in Railroad Service Over 60-Mile Route from Algiers to Buras, La.

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